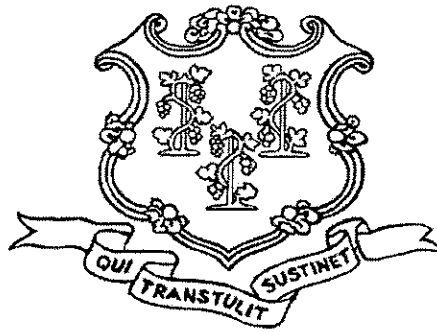


**STATE OF CONNECTICUT
DEPARTMENT OF PUBLIC WORKS**

DIVISION 1

**GENERAL REQUIREMENTS
(Construction)**



**DEPARTMENT OF PUBLIC WORKS
JAMES T. FLEMING
COMMISSIONER**

**ROOM 453
165 CAPITOL AVENUE
HARTFORD, CONNECTICUT 06106**

March 20, 2003

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NOTE TO ARCHITECT/ENGINEER & PROJECT MANAGER:

The Table of Contents includes Division 0 (all bidding documents and General Conditions of the Contract), Division 1 (General Requirements) and Divisions 2 through 17.

(Technical Specifications). This Table of Contents is to be prepared and modified by the Architect/Engineer as required by the specifics of the project.

Division 0 Sections contain the bidding documents as required by the Department of Public Works and the Connecticut General Statutes. Any and all revisions to this section is the sole responsibility of the Department. The Architect/Engineer shall under no circumstances change these documents. The Architect /Engineer is responsible to list these sections in the Project Manual Table of Contents.

Division 1 Sections are the organizational key of the Project Manual. All revisions to this Division are the responsibly of the Architect/Engineer. Division 1 must be closely coordinated with Division 0, Division 2 through 17, the Drawings and the DPW Bid Data Sheet (to be filled out by the Architect/Engineer for bidding).

The Table of Contents must have the page count and this count must be inserted in the far right column. This will need to be revised for accuracy at the final Tracings and Masters submission.

Insert additional rows within each Division in order to accommodate the required Sections. If a Division is not part of the project scope, retain Division title and state not applicable under the Division title in the center column.

The **header and footer** for each page of the Project Manual shall match the format, font (Times New Roman), size (11 pt), font style (**BOLD & CAPITALIZED**) and line boarders, of the header and footer shown herein.. The **header** of each page shall contain the Section Number, the Section Title, and the page number & number of pages as shown herein. The **footer** shall contain the project number in the right hand side as shown herein, including the Table of Contents. Division 0 and 1 contain a revision date in the left side of the footer This date is to remain as it is for Department informational purposes only and should not be altered by the Architect/Engineer.

Where text is bold and italicized, it is for example purposes only and must be modified and edited by the Consultant to make it project specific.

In Divisions 2 through 17 "insert rows as required for the number of sections.
Edit the Number of Volumes as required by the size & number of pages in the Project Manual.

A floppy copy should be given to the Project Manager at T&M submittal for the table of contents. The page numbers for Division 0 will be adjusted by DPW.

USE 'P' DRIVE, DIVISION 1, NON-PRINT NOTES, LONG TO FIND TABLE OF CONTENTS.

HOWEVER, THE 7/8/04 VERSION IS THE CORRECT VERSION WHICH INCLUDES SECTION 00021.

To access the Table of Contents for Formal or Informal projects:

Click on the "P" drive

Click on:

Teams folder

Manuals

Project Manager's Manual

6 Bid Stage

Forms

Project Manual Divisions 0 & 1

* Division 1 Long Version (**Formal** Table of Contents)

NonPrint Notes Div 1 Long

00001 Table of Contents (Long Master)

OR*

* Division 1 Short Version (**Informal** Table of Contents)

NonPrint Notes Div 1 Short

00001 TOC (Short) Master

To access Division 0 Master Documents:

Click on the "P" drive

Click on:

Teams folder

Manuals

Project Manager's Manual

6 Bid Stage

Forms

Project Manual Divisions 0 & 1

Division 0

(PSO shall highlight and copy the masters into their own file for each new project.)

NOTE: The Section 01010 "Summary of Work" more than any other, is project specific. This Section expands requirements regarding definition of work of this contract; owner supplied products; contractor use of premises; future work; and owner occupancy of any portion of or all of the work. Sample section text is contained to illustrate possible section content. Revise sample paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

The **header and footer** for each page of the Project Manual shall match the format, font (Times New Roman), size (11 pt), font style (**BOLD & CAPITALIZED**) and line borders, of the header and footer shown herein. The **header** of each page shall contain the Section Number, the Section Title, and the page number & number of pages as shown herein. The **footer** shall contain the project number in the right hand side as shown herein, including the Table of Contents. Division 0 and 1 contain a revision date in the left side of the footer. This date is to remain as it is for Department informational purposes only and should not be altered by the Architect/Engineer.

DO NOT include Paragraphs or parts of Paragraphs in the project manual, which have no applicability to the specific project. KEEP IN NUMERICAL SEQUENCE, IF A PART IS NOT USED OR ELIMINATED THEN RENUMBER THE FOLLOWING SECTIONS. IF A PART IS NOT APPLICABLE TO A SPECIFIC PROJECT THEN DESIGNATE IT AS (NOT APPLICABLE). Also, please review the General Conditions carefully and coordinate the requirements of those Articles including the Definitions.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Construction Documents and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Number _____ is entitled _____. It is to be located in _____, Connecticut. It is to be completed and ready for use by the Owner and Agency within the Contract Time specified in Division 0 Section 00020 Bid Proposal Form.

- B. The Project Description

NOTE: Include an abbreviated summary of major items of work for the project described above in the above paragraph. An Example of new construction follows, edit as necessary. Change for Renovation Work or a combination of types of Work.

1. Construction of an building of approximately _____ gross square feet.
2. The building is new and shall be constructed of materials that include but are not limited to the following: The structure shall consist of _____. Exterior wall construction shall consist of _____. Roof construction shall consist of _____. Foundations shall consist of _____. Interior finishes include _____. Floor coverings include _____. Ceilings shall be _____.

NOTE: Select correct definition below that applies and delete the other.

3. This Project Exceeds the Threshold limits as defined by the Connecticut General Statutes.

OR

3. This Project **does not** Exceed the Threshold limits as defined by the Connecticut General Statutes.

- C. Project Location: The _____, located in _____, Connecticut.

- D. Owner and Agency:

1. Owner: The Owner is the Department of Public Works, State of Connecticut.

2. The authorized representative for the Owner is _____, Project Manager. The Project Manager is located at Room _____, 165 Capitol Avenue, Hartford, CT, 06604. Phone: _____; Fax: _____; E-mail: _____.

NOTE: For all projects, identify the name, location and phone/fax numbers of the Project Manager, authorized to perform this function. See Article 25 "All work subject to control of the Commissioner" General Conditions for the authority of the Project Manager.

- a. The Project Manager is the authorized representative for the Department of Public Works Commissioner to act in matters involving revoking, altering, enlarging or relaxing any requirement of the contract documents.

3. Agency: The Agency is _____.

NOTE: Identify the name and location of the Agency.

4. The Agency Representative is _____. The Agency Representative's title is _____. The Agency Representative is located at _____. Connecticut, _____. Phone: _____; Fax: _____; E-mail: _____.

NOTE: Identify the name and location of the Agency Representative.

- a. The Agency Representative has the administrative authority for the facility and or site where the work is being performed but does not have the authority to change the contract documents or direct the contractor.

E. Architect and Engineer:

NOTE: Identify the names of Architect or Engineer for all projects. This section uses the term Architect and Engineer. Change this term as necessary to match the actual term used to identify the design professionals appropriate for the project and as defined in the General and Supplementary Conditions.

1. The Architectural Firm is _____, and is located at _____, _____, _____. The Architect representing the firm for this project is _____.
Phone: _____; Fax: _____; E-mail: _____.
2. The Architect and Engineer or their accredited representative is referred to in the Contract Documents as "Architect" or "Architects" or "Engineer" or "Engineers" or by pronouns which imply them. As information for the Contractor, the Architect's or Engineer's status is defined as follows:
- a. The Architect and Engineer will not make interpretations or decisions directly to the Contractor. All interpretations or decisions will be conveyed through the Construction Administrator.
- b. As the authorized representative of the Department of Public Works Commissioner, the Architect and Engineer is responsible for review of shop drawings, materials, and equipment intended for the work, in accordance with the "General Conditions", and the "Supplementary Conditions".
3. Wherever the Architect or Engineer is mentioned in the documents in connection with an administrative function, it shall include the Construction Administrator in that function except for shop drawings.

F. Construction Administrator:

NOTE: Identify the named Construction Administrator for all projects. See Article 26 "Authority of the Construction Administrator" in the General Conditions for the authority of the Construction Administrator.

1. The Construction Administrator is _____, and is located at _____, Connecticut, _____.
Phone: _____; Fax: _____; E-mail: _____.

- a. The Construction Administrator is referred to in the Contract Documents as "Construction Administrator" or by pronouns which imply it. All communications concerning the project will be directed through the Construction Administrator or a designated representative(s).
2. As information to the Contractor, the Construction Administrator's status is defined as follows:
 - a. The Construction Administrator is the Owner's Agent who will, among other things, monitor the General Contractor's performance, scheduling and construction, process shop drawings, material, and equipment submittals, review and process periodic billings, review and recommend cost changes.
3. The Construction Administrator will process all requests for information, interpretations and decisions regarding the meaning and intent of the Contract Documents, consulting with appropriate parties prior to rendering the interpretations or decisions to the Contractor. All such requests and replies shall be in writing.

G. Work Includes but is not limited to the following:

NOTE: Insert summary of work here. Examples of types of work are shown below. Edit as required for this specific Project.

- 1 *Sitework, Landscaping, Site Utilities;*
- 2 *Cast-in-Place Concrete, Architectural Precast Concrete;*
- 3 *Masonry;*
- 4 *Structural Steel, Miscellaneous Metals;*
- 5 *Rough Carpentry, Architectural Woodwork, Laminate Clad Casework;*
- 6 *Waterproofing, Insulation, Sprayed-on Fireproofing, Firestopping, Roofing, Sheet metal, and Joint Sealants;*
- 7 *Doors and Frames, Overhead Doors, Aluminum Windows, Hardware, and Glazed Aluminum Curtain Wall;*
- 8 *Drywall, Floor Coverings, Acoustical Ceilings, and Painting;*
- 9 *Visual Display Boards, Toilet Compartments, Louvers and Vents, Wall Surface Protection Systems, Signage, Lockers, Fire Extinguishers, and Toilet Accessories;*
- 10 *Projection Screens, Loading Deck Equipment, Dark Room Equipment, Laboratory Furnishings, Fume hoods, Fittings and Fixtures, and Equipment;*
- 11 *Louver Blinds and Floor Mats;*
- 12 *Elevators;*
- 13 *Plumbing, Fire Protection, HVAC, and Controls;*
- 14 *Electrical and Fire Alarm Systems; and*
- 15 *Special Equipment.*

- H. The Contractor will include in his bid, all items required in order to carry out the intent of the Work as described, shown and implied in the Contract Documents.
- I. It shall be the Contractor's responsibility upon discovery to immediately notify the Construction Administrator, in writing, of errors, omissions, discrepancies, and instances of noncompliance with applicable codes and regulations within the documents, and of any work which will not fit or properly function if installed as indicated on the Contract Documents. Any additional costs arising from the Contractor's failure to provide such notification shall be borne by the Contractor.

NOTE: Identify type of contract for this project as state in the Bid proposal Form.

J. The Work will be constructed under a single lump sum prime general contract.

1.3 WORK UNDER OTHER CONTRACTS

NOTE: Retain this Article if work under this contract depends on work upon successful completion of work under other contracts and vice versa. Repeat paragraphs below as necessary to list all separate contractors.

A. Separate Contract: The Owner has awarded a separate contract for performance of certain construction operations at the site. Those operations are scheduled to be substantially complete before the work under this Contract begins. The separate contract includes the following:

NOTE: Insert name of separate contractor and brief description of work to be performed.

1. Contract: A separate contract has been awarded to _____ to perform the following Work _____.

NOTE: Retain paragraph below when work under other contracts will be conducted concurrently. Revise to suit actual project conditions.

B. Separate Contract: The Owner has awarded a separate contract for performance of certain construction operations at the site. These operations will be conducted simultaneously to the work under this Contract. The separate contract includes the following: _____.

NOTE: Insert name of separate contractor and brief description of work to be performed if applicable, if not applicable delete this section and renumber.

C. Cooperate fully with separate contractors so that work under those contracts may be carried out smoothly, without interfering with or delaying work under this contract.

1.4 FUTURE WORK

NOTE: Retain this Article if future contract depends on work upon successful completion of work under other contracts and vice versa. Repeat paragraphs below as necessary to list future contracts.

A. Future Contract: The Owner may award a separate contract for additional work to be performed at the site following Substantial Completion. Completion of that work depends on successful completion of preparatory work under this Contract. The Contract for future work includes the following:

NOTE: Insert name of future contractor (if Known) and brief description of work to be performed.

1. Contract: A separate contract will be awarded to _____ to _____.
2. Contract: A separate contract will be awarded to _____ to _____.
3. Contract: A separate contract will be awarded to _____ to _____.
4. Contract: A separate contract will be awarded to _____ to _____.

1.5 WORK SEQUENCE (PHASES)

NOTE: Retain this article if the project is conducted in separate phases. Delete if phasing is not required. depends on successful completion of work performed under this contract. Revise paragraphs below to suit actual project conditions.

NOTE: Example: Amplify paragraph below if necessary. Revise to suit actual project conditions. Insert number of Phases and completion date(s) as required.

A. The Project shall be constructed in _____ Phases. Work of this Phase shall be substantially complete, ready for occupancy within _____ Calendar Days of commencement of the Work.

NOTE: Example: Insert Phase number and brief description of the intent of the each Phase as required. Repeat as required for each Phase.

- B. Phase ____ shall include the following portions of work, including all labor and material, shown on the drawings and/or as specified hereinafter. The intent of Phase ____ is to ____ and includes but is not limited to the following:

NOTE: Example: Insert brief summary of work included in the various phases and list examples such as those indicated below. Repeat as required for each Phase.

1. All work shown and specified for *(insert specific project title here)*.
2. All Division 2 Site Work
3. All Division 3 Concrete Work (including precast concrete wall panels)
4. All Division 4 Unit Masonry Work
5. All Division 5 Metals Work
6. All Mechanical and Electrical Work, materials and labor, as specified and/or as shown on the drawings as follows:
 - a. The installation of all underground utilities.
 - b. The installation of a complete and functional Boiler Room including all equipment.
 - c. The installation of a complete and functional chiller plant including all equipment.
 - d. The installation of the electrical generator. This equipment is to be set in place, but not made functional which will be accomplished under Phase ____.

NOTE: Example: Insert Phase number and brief description of the intent of the each Phase as required. Repeat as required for each Phase.

- C. Phase ____ shall include all work that is remaining in order to fully complete the entire project, including all labor and material, as shown on the drawings and/or as specified hereinafter. The intent of Phase ____ is to ____ and includes but is not limited to the following: ____.

NOTE: Example: Insert brief summary of work included in the various phases and list examples such as those indicated below. Repeat as required for each Phase.

1.6 CONTRACTOR USE OF PREMISE

NOTE: This article specifies requirements that govern the contractor's use of the premises. Retain paragraph below when the project is on a vacant site or in an unoccupied building being renovated. Revise if necessary. If paragraph is retained, delete or revise the remainder of the article if unusual project requirements exist.

- A. General: During the construction period the Contractor shall have full use of the newly constructed premises for construction operations, including use of the site. The Contractor's use of the premises is limited only by the Owner's right to perform work or to retain other contractors on portions of the Project.

NOTE: Delete above and retain below if the site will be accessible to other parties, or if some parts of a building being renovated will be occupied during construction. Revise to suit specific project requirements such as designation and location of construction entrances, use of existing agency facilities such as parking, wetland protection, and contract limit boundaries.

- B. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
1. Owner Occupancy: Allow for Owner occupancy and use by the public of the existing facility.
 2. The Contractor shall confine his operations including storage of materials, supplies, equipment, and apparatus to the areas bounded by the contract limits indicated and as directed in the Contract Documents.

3. Existing roads, drives, walks, and parking areas which are not within the contract limit line are to be kept free and clear at all times. All deliveries for the project are to enter the _____ property from _____. All Contractors are to check all _____ roadways for accessibility and clearances for deliveries of all large material and equipment. They shall inform the Construction Administrator at least 72 hours in advance of these deliveries so they can be coordinated with the Agency so appropriate traffic control, etc. can be provided. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 4. The Contractor shall be responsible for keeping the premises clean and shall pick up rubbish and debris and promptly remove from site.
 5. Parking for the Contractor's employees will be limited to an area designated by the Construction Administrator, and the Contractor may be required to provide identification stickers for all employees' cars.
 6. Special precautions shall be taken to protect all wetland areas designated to remain. Prevent any and all sediment, debris, or other materials from getting into these areas. Should any sediment, debris, or other materials get into these areas or if any damage occurs to the vegetation therein, the Contractor shall immediately contact the Construction Administrator for direction.
 7. The Contractor shall comply with local working hour restrictions, unless specifically approved otherwise in writing by the Owner.
 8. No signs, other than those approved by the Construction Administrator, will be visible on the premises.
- C. Use of the Existing Building: Maintain the existing building in a weather-tight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period. Note: Check with Agency special types of conditions. Contractor personnel are not allowed to use the Cafeteria or vending machines within the existing buildings unless authorized in writing by the agency.

NOTE: Insert additional paragraphs specifying specific limitations on a contractor's use of an existing building. Describing restriction that might be required when work is performed on an existing occupied building. Insert Agency sexual harassment and fraternization policies as applicable.

1.7 OCCUPANCY REQUIREMENTS

NOTE: This Article contains paragraphs describing occupancy of the project during construction. It also describes partial occupancy before substantial completion. Modify as necessary

NOTE: Retain paragraphs below when the Agency will occupy the premises during construction. Modify as necessary.

- A. Full Agency Occupancy During Construction: The Agency will occupy the site and existing building during the entire construction period. Cooperate with the Agency during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with the Agency's operations.
1. Provide adequate building and fire code egress from the buildings during the renovation process and/or as indicated on the Contract Documents. The Contractor will be responsible to maintain and protect egress ways during the construction sequence as required and/or indicated in the Contract documents. Contractor shall be responsible for preparing egress plans for Owner approval and for Office of State Building Official and Office of State Fire Marshal for approval if required.

NOTE: Retain paragraph below when the Agency might occupy completed portions of the building prior to substantial completion. Modify to suit project requirements.

- B. Partial Agency Occupancy: The Agency reserves the right to occupy and to place and install equipment in completed areas of the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.
1. Should it become necessary or advisable, as the work nears final completion, for the Agency to occupy a portion of the building prior to final acceptance, the Contractor shall cooperate in completing such areas and making same accessible.
 2. The Construction Administrator will determine whether such occupancy or use is possible and, if so, will make arrangements for holding a job inspection with the Project Manager, Agency Representative, Architect and General Contractor.
 3. A comprehensive list of items to be completed or corrected as issued by the General Contractor, together with the status of completion and terms of occupancy, will be forwarded to the Project Manager and the Architect by the Construction Administrator. A letter will be issued by the Project Manager and Architect to Construction Administrator granting such occupancy and will state the terms and conditions of occupancy.
 4. Prior to partial Agency occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy, the Agency will operate and maintain mechanical and electrical systems serving occupied portions of the building.

NOTE: For Paragraph below review Section 01027 "Application for Payment" that also uses "Certificate of Substantial Completion" for Final Payment, carefully coordinate the sections.

5. The Architect will prepare a "Certificate of Substantial Completion" for each specific portion of the Work to be occupied prior to Agency occupancy. Use the "Certificate of Substantial Completion" form as required by the Owner.

NOTE: Retain either paragraphs dependent on whether project is non threshold limit building or building exceeds threshold limits. Agency will occupy portions of building during construction. Delete non-applicable paragraph.

6. The Project Manager will request a signed "Certificate of Compliance" from Commissioner of the Department of Public Works, Architect, and Contractor, if required.

OR

6. The Project Manager will request a signed "Certificate of Compliance" from the, Architect, and Contractor, and forward the Certificate to the Office of State Building Inspector for a Certificate of Occupancy and obtain the same after his review and approval.

NOTE: Retain paragraphs below to describe procedures and requirements necessary before partial occupancy of portions of the project. Modify as necessary.

7. A letter from the Project Manager to the Agency Representative with copy to the General Contractor granting occupancy will state the terms and conditions of occupancy and that fire insurance coverage has been requested, the effective date of which will indicate to the Contractor that he may cancel fire insurance coverage for that portion of the project.
8. Upon occupancy, the Agency will assume responsibility for maintenance and custodial service for occupied portions of the building.
9. Work after Partial Agency Occupancy:

- a. For all work to complete the area occupied, warranty work, the balancing and commissioning of systems, repair of latent defects and adjustments after partial occupancy, the contractor is responsible for all costs associated with working in occupied buildings.

NOTE: Retain paragraphs below when the Agency will occupy building after construction. Modify as necessary.

C. Agency Occupancy:

1. The Construction Administrator will determine whether such occupancy is possible and, if so, will make arrangements for holding a job inspection with the Project Manager, Agency Representative, Architect and General Contractor.
2. The Construction Administrator will forward a comprehensive list of items to be completed or corrected as issued by the General Contractor, together with the status of completion and terms of occupancy, to the Project Manager and the Architect. A letter will be issued by the Project Manager and Architect to Construction Administrator granting such occupancy and will state the terms and conditions of occupancy.
3. Prior to Agency occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy, the Agency will operate and maintain mechanical and electrical systems serving occupied portions of the building.
4. The Architect will prepare a "Certificate of Substantial Completion" for the Work to be occupied prior to Agency occupancy. Use the "Certificate of Substantial Completion" form as required by the Owner.

Note: Retain either paragraphs dependent on whether project is if non threshold limit building or building exceeds threshold limits Agency will occupy portions of building during construction. Delete non-applicable paragraph.

5. The Project Manager will request a signed "Certificate of Compliance" from Commissioner of the Department of Public Works, Architect, and Contractor, if required.

OR

5. The Project Manager will request a signed "Certificate of Compliance" from the Architect, and Contractor, and forward the Certificate to the State Building Inspector a Certificate of Occupancy and obtain the same after his review and approval.

NOTE: Retain paragraphs below to describe procedures and requirements necessary before Agency occupancy of the project. Modify as necessary.

6. A letter from the Project Manager to the Agency Representative with copy to the General Contractor granting occupancy will state the terms and conditions of occupancy and that fire insurance coverage has been requested, the effective date of which will indicate to the Contractor that he may cancel fire insurance coverage for the project.
7. Upon occupancy, the Agency will assume responsibility for maintenance and custodial service for occupied portions of the building.
8. Work after Agency Occupancy:
 - a. For all work to complete the occupied building, warranty work, the balancing and commissioning of systems, repair of latent defects and adjustments after occupancy, the contractor is responsible for all costs associated with working in occupied buildings.

1.8 PRODUCTS ORDERED IN ADVANCE

NOTE: The article below is an example of a requirement that best described in this section. Delete if the owner does not preorder products or equipment.

- A. General: The Owner has negotiated purchase orders with suppliers of material and equipment to be incorporated into the Work. The Owner has assigned these purchase orders to the Contractor. Costs for receiving handling and storage, and installation are included in the contract sum.
1. The Contractor's responsibilities are the same as if the contractor negotiated the purchase orders. If necessary, the Contractor shall renegotiate purchase and execute final purchase-order agreements.
 2. A "Schedule of Products Ordered in Advance" is included at the end of this section.

1.9 OWNER-FURNISHED PRODUCTS

NOTE: This article defines the responsibilities of the owner and the contractor for owner-furnished items. Retain paragraph below where the owner furnishes products for a project. Give brief description of Owner furnished products such as equipment, and material and/or are indicated in the Contract Documents.

- A. The Owner may furnish various products such as _____ and/or as indicated in the construction documents. The Work includes providing support systems to receive Owner's equipment, and mechanical and electrical connections.

NOTE: Retain subparagraphs on all projects with furnished products such as equipment, and material.

1. The Owner will arrange for and deliver necessary shop drawings, product data, and samples to the Contractor.
2. The Owner will arrange and pay for delivery of Owner-furnished items according to the Contractor's Construction Schedule.
3. Following delivery, the Owner will inspect items delivered for damage.
4. If Owner-furnished items are damaged, defective, or missing, the Owner will arrange for replacement.
5. The Owner will arrange for manufacturer's field services and for the delivery of manufacturer's warranties to the appropriate Contractor.
6. The Contractor shall designate delivery dates of Owner-furnished items in the Contractor's Construction Schedule.
7. The Contractor shall review shop drawings, product data, and samples and return them to the Architect noting discrepancies or problems anticipated in use of the product.
8. The Contractor is responsible for receiving, unloading, and handling Owner-furnished items at the site.
9. The Contractor is responsible for protecting Owner-furnished items from damage, including damage from exposure to the elements. The Contractor shall repair or replace items damaged as a result of his operations.

1.10 MISCELLANEOUS PROVISIONS

NOTE: This Article is for general Miscellaneous provisions.

A. Examination of Site:

1. It is not the intent of the Documents to show all existing conditions. All contractors are advised to attend the Pre-bid Conference prior to submitting their Bid Proposals. This is the only official opportunity visit and examine the site with the Owner, Agency, Architect, Engineer and Construction Administrator.

2. Contractors should investigate and satisfy themselves as to the conditions affecting the work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, uncertainties of weather, roads or similar physical conditions of the ground, the character of equipment, and facilities needed preliminary to and during the prosecution of the Work. The Contractor should further satisfy himself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, as well as from information presented by the Contract Documents. Any failure by the Contractor to acquaint himself with the available information shall not relieve him from the responsibility for estimating properly the difficulty and cost of successfully performing the Work.

NOTE: Revise the sentence below and insert appropriate text for the project or delete entirely if not required

3. If tests have been done for Asbestos containing Material (ACM), and/or Lead Containing Material (LBP), the results are in a separate volume of this Project Manual.
4. Tests have not been done for Work Involving "Products Containing Persistent Bioaccumulative Toxic Chemicals" (PBT's) such as Polychlorinated Biphenols (PCB's), Di-2-ethylhexyl Phthalate (DEHP) and Mercury, but Division 1 Section 01120 "Alteration Project Procedures" states exposure limits and removal responsibility.
5. Subsurface Investigations:
 - a. Boring logs have been prepared for the site of this work and are on the plans.
 - b. If Geotechnical Reports(s) have been prepared for this project they are in a separate Volume.
 - 1). The Contractor must interpret the Geotechnical Report (s) according to his own judgement and acknowledges that he is not relying upon the data as accurately describing the subsurface conditions which may be found to exist.
 - 2). The Contractor further acknowledges that he assumes all risk contingents upon the nature of the subsurface conditions, which shall be actually encountered by him in performing the Work of this Contract.
 - 3). The Contractor should visit the site and become acquainted with all existing conditions and may make their own subsurface investigations to satisfy themselves as to the subsurface conditions. Such investigations shall be conducted only under time schedules and arrangements approved in advance by the Owner.
 - c. Subsurface Contaminated Soils Investigations:
 - 1). If a Contaminated Soils Report has been prepared for this Project it would be included in a separate Volume. The Owner shall be responsible for the remediation and disposal of all Contaminated Soils when they are indicated in this report.
 - 2). If the Contractor should encounter any material suspect or known to contain Contaminated Soils, he should immediately notify the Owner of same. It is the State's responsibility to have the material tested and abated (if necessary). The Owner will respond within (2) Working Calendar Days after receiving the Contractor's written request for testing the suspect material. The Owner shall arrange for the remediation and disposal of all Contaminated Soils (if necessary) within a reasonable time period, i.e. within (7) seven Working Calendar Days.

3). No attempt has been made to locate hazardous material associated with existing site utilities, though it is presumed that at least some asbestos may be discovered associated with underground piping during the course of site and site utilities work. If and when such materials appear, the Contractor shall notify the Owner, who shall direct additional work outside of this Contract to assist in cutting up and disposing of same. The Contractor shall assist the hazardous materials contractor(s) with excavating, heavy lifting, and the like at no additional cost to the Owner.

B. Pre-Bid Conference:

1. A Pre-Bid Conference and tour of the site will be conducted as scheduled in the Notice to Bidders. This scheduled conference is the only official opportunity for the bidders to tour the site with the Owner, Architect, Engineer, Construction Administrator, and Agency.

C. Project Documents

1. The Specifications and Drawings are intended to describe and illustrate the materials and labor necessary for the work of this Project.
2. Throughout the Technical Specifications, the Connecticut Department of Transportation Standard Specifications for Roads, Bridges, and Incidental Construction Form 814A, current addition including any interim and supplemental specifications are referenced. Where so referenced the requirements set forth therein are applicable and made a part hereof. Copies of Form 814A are available from the Connecticut Department of Transportation at a nominal charge.

D. Drawings, Disks and Specifications Furnished

1. The Contractor shall receive one (1) set of AutoCAD compatible (latest version) Floor Plans on disks at no cost on or about the time of execution of the Contract from the Architect. Additional sets of AutoCAD compatible (latest version) Floor Plans on disks from the Architect at the cost of their reproduction, to the contractor.

NOTE: Insert number of sets, minimum of 10 sets, over \$10,000,000 25-30 sets. This is a guideline, the A/E shall determine the number by the number of sub-contractors that will be involved with the job.

2. The General Contractor will be given _____ sets of the Contract Documents on or about the time of execution of the Contract, free of charge. If additional copies are wanted, they will be available at the direct additional cost of their reproduction, to the contractor.

E. Construction Responsibility

1. The Contractor shall be responsible for his construction means, methods, techniques, sequences, and procedures employed in the performance of his work and shall have full responsibility for his failure to carry out any part of his work in accordance with the contract Documents.

F. Overtime

NOTE: Define any work required outside normal working hours. Approval from the Owner is required.

1. The Contractor shall request approval from the Owner to work overtime. Said request shall be made 48 hours in advance. All costs for overtime are included in the Contract Sum as stated in Section 00020 Bid Proposal Form.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

NOTE: If products ordered in advance are included in the project, insert a schedule.

END OF SECTION 01010

NOTE: This Section 01019 "Contract Considerations" includes requirements regarding Cash and Allowances, Unit Prices and submittal of Contractor's applications for payment under lump sum contracts. Sample section text is contained to illustrate possible section content. Revise sample paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

The **header and footer** for each page of the Project Manual shall match the format, font (Times New Roman), size (11 pt), font style (**BOLD & CAPITALIZED**) and line borders, of the header and footer shown herein. The **header** of each page shall contain the Section Number, the Section Title, and the page number & number of pages as shown herein. The **footer** shall contain the project number in the right hand side as shown herein, including the Table of Contents. Division 0 and 1 contain a revision date in the left side of the footer This date is to remain as it is for Department informational purposes only and should not be altered by the Architect/Engineer.

DO NOT include Paragraphs or parts of Paragraphs in the project manual, which have no applicability to the specific project. KEEP IN NUMERICAL SEQUENCE, IF A PART IS NOT USED OR ELIMINATED THEN RENUMBER THE FOLLOWING SECTIONS. IF A PART IS NOT APPLICABLE TO A SPECIFIC PROJECT THEN DESIGNATE IT AS (NOT APPLICABLE). Also, please review the General Conditions carefully and coordinate the requirements of those Articles including the Definitions.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Contract Documents and general provisions of the Contract, including General and Supplementary Conditions, other Division 1 Specification Sections, and Section 00020 Bid Proposal Form apply to this Section.

1.2 SUMMARY

NOTE: Cash allowances shall only be allowed by special permission from Department of Public works sole source committee. Edit the following list depending whether the relevant article pertains to the specific project.

- A. This Section includes the following:
 - 1. Cash Allowances.
 - 2. Unit Prices.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section 01027 "Application for Payments".
 - 2. Division 1 Section 01030 "Supplemental Bids".
 - 3. Division 1 Section 01035 "Modification Procedures".
 - 4. Division 1 Section 01700 "Contract Closeout".

1.3 ALLOWANCES

NOTE: Edit and revise below as necessary to suit special project requirements.

- A. This Section includes administrative and procedural requirements for Allowances.
- B. Related Sections: The following Sections contain requirements that relate to this Section:

NOTE: The following Division 1 Section contains requirements that relate directly to allowances.

- 1. Division 1 Section 01035 "Modification Procedures" for procedures for submitting and handling Change Orders.
- C. Cash Allowances:

NOTE: The use of Cash allowances is an exception only when the A/E can support their case and get permission from Department of Public Works. Cash allowances are a method of allocating construction funds to portions of the work, which cannot be specified with specific particularity for competitive bidding at the time of contracting. Allowances may only be used if permitted by the Project Manager. If permitted, include the following:

1. The Contractor's costs for unloading and handling, labor, installation costs, storage, insurance, overhead and profit and other expense related to the Allowance item shall be included in the Lump Sum Bid Amount and not in the Allowance unless stated otherwise is the Allowance Schedule of this section.
2. Architect/Engineer:
 - a. Consult with Contractor for consideration of Products, suppliers and installers.
 - b. Select Products in consultation with the Project Manager and Agency Representatives and transmit decision to Construction Administrator.
 - c. Prepare Change Order.
3. Construction Administrator Responsibilities:
 - a. Consult with Architect/Engineer, Contractor, Project Manager and Agency Representatives for consideration of Products, suppliers and installers.
 - b. Select Products in consultation with Architect/Engineer, Project Manager and Agency Representatives and transmit decision to Contractor
 - c. Prepare Change Order.
4. Contractor Responsibilities:
 - a. Assist Architect/Engineer and Construction Administrator in selection of Products and Suppliers.
 - b. Obtain proposals from Suppliers and offer recommendations.
 - c. On notification of selection by Construction Administrator execute purchase agreement with designated supplier.
 - d. Arrange for and process shop drawings, product data, and samples. Arrange for delivery.
 - e. If the actual cost of an Allowance item is more or less than the given amount, the Contract Sum will be adjusted by Change Order.
5. Allowance Schedule:

NOTE: Show schedule of "Cash Allowances" permitted by Project Manager. Four types of cash allowances are listed. If permitted, include the following information. Verify that each referenced section contains a cross-reference to this section and clearly identifies the product to be included under the cash allowance. Create a sub paragraph below for each cash allowance. Revise and edit as required for specific project.

- a. Section ____ - "____": Include the Stipulated sum of \$ ____ for delivery of ____.
- b. Section ____ - "____": Include the Stipulated sum of \$ ____ for purchase of ____.
- c. Section ____ - "____": Include the Stipulated sum of \$ ____ for purchase and delivery of ____.
- d. Section ____ - "____": Include the Unit Price of \$ ____ for purchase and delivery of ____.

1.4 UNIT PRICES - GENERAL

NOTE: This article describes the measurement and payment criteria for applicable to unit price work. This article should only be used with Work paid by the unit price method.

A. This Section includes administrative and procedural requirements for unit prices.

B. Related Sections: The following Sections contain requirements that relate to this Section:

NOTE: The following division 1 section contains requirements that relate directly to unit prices.

1. Division 1 Section 01035 "Modification Procedures" for procedures for submitting and handling Change Orders.
2. Division 1 Section 01027 "Application for Payments" for procedures for submitting Application for Payments

C. Definitions

NOTE: The definition below assumes a project where the contract documents indicate or provide estimated quantities. Revise the definition if bidders are required to estimate quantities as well and include them with the bid.

1. Unit Price: Amount The General Contractor acknowledges in the Bid Proposal Form as a price per unit of measurement for materials or services as described in the Bidding Documents or in the Contract Documents.

D. Procedures

NOTE: Retain the requirement below unless the supplementary conditions include similar requirements.

1. Unit Prices included in the Contract Documents are to be used for determining compensation to the Contractor or Owner for changes to the scope of the work indicated in the Contract Documents, and included in the Lump Sum Contract Price. Special Unit Prices are for items complete, in place, and shall be inclusive of furnishing and installing of all material, labor, trucking, overhead, profit, equipment, hoisting, engineering, scaffolding, power hookups, protection, shop drawings, taxes, permits, appliances, delivery, insurance, supervision, cost of bond, etc. and shall remain in effect until completion of the Contract.
2. Unit Price: Is identified by the Owner as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if the estimated quantities of Work required by the Contract Documents are increased or decreased.
 - a. Should the amount of the Work required be increased or decreased because of changes in the work ordered in writing by the Project Manager, the Undersigned agrees that the following supplemental UNIT PRICES will be decreased 10% for a reduction of work. Each Unit Price shall include all equipment, tools, labor, permits, fees, etc., incidental to the completion of the work involved. All items marked with an asterisk (*) in the unit price schedules shall include the completion of the excavation, formation and compaction of sub-grade and the disposal of surplus or unsuitable materials in accordance with the Plans and Specifications or as directed by the Construction Administrator.

NOTE: Retain the requirement below revise to suite specific project requirements.

3. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this work measured, at the Owner's expense, by an independent surveyor acceptable to the Contractor.

NOTE: Retain the requirement below revise to suite specific project requirements.

4. Defect Assessment: replace the Work, or portions of the Work, not conforming to the specified requirements, If, in the opinion of the Architect/Engineer it is not practical to remove and replace the work the Architect/Engineer will direct an appropriate remedy or adjust the payment.

NOTE: Retain the requirement below revise to suite specific project requirements.

5. Unit Price Schedule: A "Unit Price Schedule" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials described under each unit price.

1.4 UNIT PRICE SCHEDULES

NOTE: This article describes the measurement and payment criteria for applicable to unit price work for earth and rock excavation. This article should only be used with Work paid by the unit price method.

- A. Unit Price Schedule - Earth and Rock Excavation: This Section includes administrative and procedural requirements for the following unit prices and provisions are to be included in and become part of this Contract to be used in evaluating additions to or deductions from the work called for in the specifications and/or plans.
1. Unless otherwise specified elsewhere in these documents, Contractors are to assume that all excavation is earth; however, if unspecified rock is encountered, it will be paid for at the given unit prices listed in paragraph "F". Rock prices are net in that allowances for reduced quantities of earth are also included in the unit prices. The prices given include all costs for overhead, profit and rock surveys.
 2. Wherever rock to be excavated is encountered, the Contractor shall strip or expose the rock to such an extent that in the Owner's opinion the necessary measurements can be taken. The Contractor shall provide the Owner with a survey by a licensed land surveyor indicating top of rock elevations at points of intersection on a rectilinear grid with lines spaced sufficiently close to show accurately the rock surface contours. At the Owner's option, an additional survey may be furnished by the Owner from a licensed surveyor.
 3. If the conditions of the excavation work indicated are clearly of a special nature, the Contractor may ask the Owner for reconsideration of the established unit prices and if granted, the unit prices will not apply, and prices will be negotiated in accordance with Article 13 of the General Conditions.

B. Definitions:

NOTE: The definitions below assume a project where the contract documents indicate or provide estimated quantities and bidders state on the bid form the unit price amounts they propose. Revise the definition if bidders are required to estimate quantities as well and include them with the bid.

1. "EARTH" - is defined, as excavation shall include removal of all materials other than 'water' and 'rock'.
2. "ROCK" - is defined as a boulder of 1 cubic yard or more in volume (1/2 cubic yard for a boulder in trenches), and rock in definite ledge formation and masonry structures of one cubic yard or more in volume, the removal of which requires the use of mechanical equipment or the use of explosives. Rock removed by scarification or ripping method is considered as a separate classification under paragraph 4.a.(1)
3. "ORIGINAL GRADE" - is defined as being the grade which exists at the time of Contract Award.
4. "ROUGH GRADE" - is defined as being the completed surface of required excavations greater than 13' in width.
5. "MASS" - excavation is to be considered as an open area whose minimum horizontal dimensions exceeds 13'.

6. "TRENCH" - is defined as excavation is defined as the removal of material from areas 13 feet or less in its minimal horizontal dimensions and below the elevation of rough grade or original grade, whichever is lower.

C. Procedures

NOTE: Retain the requirement below unless the supplementary conditions include similar requirements.

1. Rock Excavation In Trenches: Basis For Horizontal Measurement:
 - a. Horizontal Measurements: Will be taken between the vertical planes as defined below.
 - b. The Minimum Width Of Trenches In Rock: Will be taken as 3' 0".
 - c. Excavation - For Walls Or Piers With Footings: The measurements will be taken parallel to and one foot outside of the edges of the concrete footings as called for in the plans (i.e. for 4' 0" footing, rock will be taken as 6' 0" in width).
 - d. Excavation For Walls Or Piers Without Footings: The limits of the excavation will be 1' 6" outside of the line of concrete at bottom as shown or called for in the plans (i.e. for a wall with a bottom thickness of 1' 0", the width of the trench will be considered to be 4' 0"). (Caissons are excluded from these measurements).
 - e. Excavation For Pipe Lines: Will be measured at 2' 0" more than the nominal inside diameter of the pipe but in no case less than 3' 0" wide.
 - f. Excavation For Tanks, Vaults, Manholes, Pits, Etc.: Will be measured as 2' 0" greater in both length and width or diameter than the actual exterior dimensions of the structures and this excavation is considered to be trench only if any measured horizontal dimensions is 13' or less.
 - g. No allowance will be made for rock removed beyond the above limits.
2. Rock Excavation In Trenches - Basis for Vertical Measurement:
 - a. To determine depth of trench, vertical measurements will be taken from original grade or rough grade, (whichever is applicable), to the bottom of required excavation. These measurements will define the maximum depths for payments.
 - b. To determine quantity of rock in trench, vertical measurements will be taken from the top of rock as encountered in the trench to 12" below the bottom of required rock excavation. Any over excavation below the required elevation shall be filled with concrete or other material as specified at no cost to the Owner.
 - c. No allowance will be made for rock removed beyond the above limits.
3. Earth Excavation In Trenches - Basis Of Measurement: (Horizontal & Vertical): The basis of measurements and allowance limit for earth excavation in trenches is identical to that indicated for rock excavation in trenches, except that there will be no allowance for 12" below the required elevation. In addition the following will prevail:

- a. Maximum allowable widths for earth excavation in trenches without shoring:

Trench Depth - Classification		Add To Nominal ID Of Pipe Or To Footing Width
	0 ft. - 6 ft.	3 ft.
Over	6 ft. - 10 ft.	5 ft.
Over	10 ft. - 15 ft.	7 ft.
Below 15 ft. deep the width of the trench shall be based on the individual case. The final depth of trench will determine the actual width for payment.		

- b. If shoring is required the measurement shall be taken between the exterior walls of the shoring not to exceed 4' plus the I.D. of the pipe (for all depths).
- c. To determine quantity of earth in trench, vertical measurements will be taken from the original or rough grade to actual bottom of earth excavation required.
4. Unit Prices - Earth And Rock Excavation (Basis For Payment): Prices include backfill with excavated material if it is suitable. Prices also include all excavation and disposal of all surplus or unsuitable material. Where replacement with the excavated material is prohibited or a particular backfill material is specified, the cost of the delivered replacement material in a volume equal to the above excavation pay limits minus the volume of the items installed in the trench shall be paid for a prior negotiated price. Prices do not include costs of shoring and dewatering but do include sloping for sides of excavation. Payment and credit amounts shall be determined in the following manner: Widths and depths of trench excavation as indicated. The total quantity of earth or rock excavation encountered in each depth payment category shall be paid for at its respective unit price as shown below. For example, in a 15' trench the first 6' will be paid for at the 0' - 6' price; the next 4' will be paid for at the over 6' - 10' price and the next 5' will be paid for at the over 10' - 15' price. Thus three different price brackets will prevail.

NOTE: Specifications Writers and Project Managers; verify that all unit prices and units listed below are the latest updated information available from DPW.

a. EARTH EXCAVATION - HAND			UNIT	\$ ADD	\$ DEDUCT
(1)	In Trenches - 0' - 6'.		C.Y.	36.00	28.80
(2)	In Trenches Below 6' Deep,		Prices Must Be Negotiated Before Work Is Started.		
b. EARTH EXCAVATION - MACHINE			UNIT	\$ ADD	\$ DEDUCT
(1)	Open Area	All Depths	C.Y.	7.40	5.92
(2)	In trenches	0' - 4' deep	C.Y.	4.25	3.40
	Over	0' - 10' deep	C.Y.	9.00	7.20
	Over	0' - 15' deep	C.Y.	4.75	3.80
	Over	0 - 20' deep	C.Y.	5.75	4.60
c. ROCK EXCAVATION			UNIT	\$ ADD	\$ DEDUCT
(1)	Open Areas, Rock Removed By Ripping (Any Amount),				
	Net Rock		C.Y.	9.20	7.30
(2)	Open Areas, With Explosives -				
	Net Rock -	Total Quantity Up To 100	C.Y.	27.00	21.60
		Total Quantity Up To 500	C.Y.	21.30	17.00
c. ROCK EXCAVATION (cont.)			UNIT	\$ ADD	\$ DEDUCT
		Total Quantity Up To 500 or more	C.Y.	17.00	13.60
(3)	In Trenches, Boulders, Remove By Machine		C.Y.	14.00	11.20
(4)	In Trenches, Ripping Of Rock By Machine		C.Y.	16.00	12.80
(5)	In trenches, with explosives				
	Net Rock	0' - 4' Deep	C.Y.	20.60	16.48
(6)	In trenches, with explosives				
	Net Rock	0' - 10' Deep	C.Y.	36.75	29.40
(7)	In trenches, with explosives				

		Net Rock	0 - 15' Deep	C.Y.	28.60	22.88
(8)		In trenches, with explosives				
		Net Rock	Over 15' - 10' Deep	C.Y.	60.00	48.00
(9)		In trenches, with explosives -				
		Net Rock	0 - 20' Deep,	Prices Must Be Negotiated Before Start Of Work.		
(10)		Jack Holes (For Hydraulic Lift/Elevators)		L.F.	95.00	76.00
(11)		Open Or Mass Areas - If Explosives Are Prohibited				
		Net Rock		C.Y.	80.00	64.00
(12)		Trench Excavation - If Explosives Are Prohibited				
		Net Rock/With Rock Splitters And Jack Hammer or Hoe Ram		C.Y.	120.00	96.00

D. Unit Price Schedule - Miscellaneous

Note: The unit price schedule below includes miscellaneous examples of either owner identified unit prices or unit prices required of the contract and are often encountered in building construction. The following examples are included to demonstrate possible types. Revise as necessary to suit project requirements.

1. Unit Price - Miscellaneous:

A.	MISCELLANEOUS Items	UNIT	\$ ADD	\$ DEDUCT
a.	*Structural fill			
b.	*Footing forms, contact area			
c.	*Footing concrete, in place			
d.	*Wall forms, contact area			
e.	*Wall concrete, in place			
f.	*Reinforcing steel bars, in place			
g.	*Structural steel, in place			

E. Unit Price Schedule - Alterations

Note: The unit price schedule below includes renovation examples of either owner identified unit prices or unit prices required of the contract and are often encountered in building construction. The following examples are included to demonstrate possible types. Revise as necessary to suit project requirements. Also coordinate with Section 01100 Alteration Projects. The Architect shall be responsible for completing the unit price schedule for alterations.

1. Unit Price - Alterations:

A.	ALTERATION ITEMS	UNIT	\$ ADD	\$ DEDUCT
a.	Roof Blocking			
b.	Roof Planking			
c.	Flashing			
d.	Roof Sheathing			
e.	Roof Flashing			
f.	Structural Deck			
g.	Roof Drain Assemblies			

2. Unit prices shall be negotiated if there is a change in scope of work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01019

NOTE: This Section 01027 "Applications for Payment" includes procedural requirements for preparation and submittal of Contractor's Applications for Payment under lump sum contracts. Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

The **header and footer** for each page of the Project Manual shall match the format, font (Times New Roman), size (11 pt), font style (**BOLD & CAPITALIZED**) and line borders, of the header and footer shown herein. The **header** of each page shall contain the Section Number, the Section Title, and the page number & number of pages as shown herein. The **footer** shall contain the project number in the right hand side as shown herein, including the Table of Contents. Division 0 and 1 contain a revision date in the left side of the footer. This date is to remain as it is for Department informational purposes only and should not be altered by the Architect/Engineer.

DO NOT include Paragraphs or parts of Paragraphs in the project manual, which have no applicability to the specific project. KEEP IN NUMERICAL SEQUENCE, IF A PART IS NOT USED OR ELIMINATED THEN RENUMBER THE FOLLOWING SECTIONS. IF A PART IS NOT APPLICABLE TO A SPECIFIC PROJECT THEN DESIGNATE IT AS (NOT APPLICABLE). Also, please review the General Conditions carefully and coordinate the requirements of those Articles including the Definitions.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

NOTE: Retain paragraph below unless project is constructed under multiple prime contracts.

- A. This Section specifies procedures for preparation and submittal of the Contractor's Applications for Payment.

- B. Related Sections: The following Sections contain requirements that relate to this Section.

NOTE: Revise subparagraph below if the specification is not in accordance with the General Conditions or Supplementary Conditions.

1. General Conditions: Articles: 27 "Schedule of Values, Application for Payment"; 28 "Partial Payments"; 31 "Final Payment"; and 32 "Owner's Right to Withhold Payments".
2. Division 1 Section 01035 "Modification Procedures"
3. Division 1 Section 01300 "Submittals".

NOTE: Retain paragraph below that is the type of schedule used for the project.

4. Division 1 Section 01310 "Construction Schedules".

OR

4. Division 1 Section 01315 "CPM Schedules".
5. Division 1 Section 01700 "Contract Closeout": Final Payment.

1.3 SCHEDULE OF VALUES

NOTE: Retain paragraph below unless project is constructed under multiple prime contracts.

- A. Coordination: Coordinate preparation of the "Schedule of Values" with preparation of the CPM Schedule or Construction Schedule. Use "Schedule of Values" form as required by the Owner

NOTE: Revise the time period in paragraph below if necessary to suit project requirements.

1. Submit the "Schedule of Values" to the Construction Administrator at the earliest possible date but no later than (21) twenty Calendar Days after Contract Start Date.

NOTE: Delete the requirement below if phasing is not required. For large projects, consider revising the requirement to provide sub-schedules for separate floors or large individual areas.

2. Sub-schedules: Where Work is separated into phases requiring separately phased payments, provide sub-schedules showing values correlated with each phase of payment.

NOTE: Retain the requirements below. Revise to suit project requirements. If desired, include a sample schedule of values at end of section. Delete electronic media requirement if specific project is small.

- B. Format and Content: Use the Project Manual Table of contents as a guide to establish the format for the "Schedule of Values". Provide at least one line item for each the Specification Section on electronic media printout.

1. Identification: Project identification on the Schedule of Values shall include, but not be limited to, the following:

NOTE: Modify the list below to suit project requirements by adding or deleting items.

- a. *Owner*
- b. *Project Number*
- c. *Project Name*
- d. *Project Location*
- e. *Contractor's name and address.*

2. Arrange the "Schedule of Values" in tabular format as required by the Owner, containing separate columns including, but not limited to, the following Items:

NOTE: Modify the list below to suit project requirements by adding or deleting items

- a. *Item Number.*
- b. *Description of Work with Related Specification Section or Division Number.*
- c. *Scheduled Values broken down by description number, type material, units of each material.*
- d. *Name of subcontractor.*
- e. *Name of manufacturer or fabricator.*
- f. *Name of supplier.*
- g. *Retainage.*
- h. *Contract sum in sufficient detail.*

3. Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
4. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Break principal subcontract amounts down into several line items.
5. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.

NOTE: Retain the requirement below. Strengthen to protect against undue front-end loading, if necessary. Delete the requirement below if specifications do not include unit-cost allowances.

6. Unit-Cost Allowances: Show the line-item value of unit-cost allowances, as a product of the unit cost, multiplied by the measured quantity. Estimate quantities from the best indication in the Contract Documents.

NOTE: Retain the requirement below. Modify as required to suit project requirements.

7. General Conditions: Show line items for indirect costs and margins on actual costs only when such items are listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete. Include the total cost and proportionate share of general overhead and profit margin for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at the Contractor's option.

1.4 APPLICATIONS FOR PAYMENT

NOTE: Revise the requirement below as necessary.

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and Construction Administrator and paid for by the Owner.
 1. The initial "Application for Payment", the "Application for Payment", at time of "Substantial Completion", and the final "Application for Payment", involve additional requirements.
- B. Payment-Application Terms: The Owner will process monthly progress payments. The Contractor may submit applications for payment on a monthly basis.
- C. Payment-Application Forms: Use the "Application for Payment" form as required by the Owner. Present the required information on electronic media printout or Owner approved form, multiple pages should be used if required.
 1. For each item, provide a column including but not limited to the following items:
 - a. Item Number.
 - b. Description of Work and Related Specification Section or Division.
 - c. Scheduled Value, break down by units of material and units of labor.
 - d. Work Completed from previous application.
 - e. Work Completed this period.
 - f. Materials presently stored.
 - g. Total Completed and stored to date of application.
 - h. Percentage of Completion.
 - i. Balance to Finish.
 - j. Retainage
- D. Application Preparation: Complete every entry on the Application form. At the time of Final Payment only, include an executed Application form by a person authorized to sign legal documents on behalf of the Contractor. The Construction Administrator will return incomplete Applications without action.
 1. Entries shall match data on the "Schedule of Values".
 2. Include amounts of Change Orders issued prior to the last day of the construction period covered by the application.

NOTE: Revise the number of copies below to suit specific project or DPW requirements (standard is indicated) increase to 9 copies of required for CA services.

E. Transmittal: Except for final payment, submit to the Construction Administrator by a method ensuring receipt within forty-eight (48) hours. One (1) complete, signed and notarized original of each Application for Payment, including lien waivers and similar attachments when required, along with six (6) copies. For Final Payment, nine (9) complete, signed and notarized copies shall be submitted.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information related to the application, in a manner acceptable to the Architect.

NOTE: Insert instructions for preparation and submittal of waivers or releases here if not stated in supplementary conditions.

F. Applications for Payment: Administrative actions and submittals, that must precede or coincide with submittal of the first Application for Payment and all subsequent Application for Payments including, but not limited to, the following items:

NOTE: Revise the list below to suit project requirements.

1. List of subcontractors and suppliers' name, FEIN/Social Security numbers, and Connecticut Tax Registration Numbers.
2. List of principal suppliers and fabricators.
3. Schedule of Values.
4. Contractor's Construction Schedule (preliminary if not final).
5. Schedule of principal products.
6. Submittal Schedule (preliminary if not final).
7. List of Contractor's staff assignments.
8. List of Contractor's principal consultants.
9. Copies of all applicable permits.
10. Copies of authorizations and licenses from governing authorities for performance of the Work.
11. Proof that as-built documents are updated as required by Section 01700 "Contract Closeout".

NOTE: Delete items submitted before executing the contract from those listed below.

12. Initial as-built survey and damage report, if required.

G. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion submit an Application for Payment form, use the form as required by the Owner. Present the required information on electronic media printout.

1. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work..
2. Administrative actions and submittals that shall precede or coincide with this application include, but are not limited to, the following:

NOTE: Delete from and add to the following list to suit project requirements.

- a. Occupancy permits and similar approvals.
- b. Warranties (guarantees) and maintenance agreements.
- c. Test/adjust/balance records.
- d. Maintenance instructions.
- e. Meter readings.
- f. Startup performance reports.

- g. Changeover information related to Owner's occupancy, use, operation, and maintenance.
- h. Final cleaning.
- i. Application for reduction of retainage and consent of surety.
- j. Advice on shifting insurance coverage.
- k. Final progress photographs.
- l. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion.

H. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include, but are not limited, to the following:

NOTE: Delete from and add to the list below to suit project requirements. Check with Project Manager about the need for additional affidavits and other requirements. See requirements for Final Acceptance, Final Completion, Final Inspection, and Final Payment, in the General Conditions and Supplementary Conditions.

- 1. Completion of Project Closeout requirements.
- 2. Completion of list of items remaining to be completed as indicated on the attachment to the Certificate of Substantial Completion.
- 3. Ensure that unsettled claims will be settled.
- 4. Ensure that incomplete Work is not accepted and will be completed without undue delay.
- 5. Transmittal of required Project construction records to the Owner (including as-built documents Reference Section 01700 "Contract Closeout").
- 6. Certified property survey.
- 7. Proof that taxes, fees, and similar obligations were paid.
- 8. Removal of temporary facilities and services.
- 9. Removal of surplus materials, rubbish, and similar elements.(Reference Section 01590 "Construction waste Management")
- 10. Change of door locks to Owner's access.
- 11. The requirements of the General Conditions and Supplementary Conditions for Final Acceptance, Final Completion, Final Inspection, and Final Payment.
- 12. Asbestos, Lead or other hazardous material manifests.
- 13. Completion of "Building Contractor Reporting Form" as supplied by Department of Public Works, for all Contractors, Subcontractors, Vendors, Suppliers, etc. who work on the Contract. The form includes the following information:
 - a. Contractor/Subcontractor name.
 - b. FEIN/Social Security Numbers
 - c. Connecticut Tax Registration Numbers
 - d. Type of work
 - e. Name of business and address
 - f. Remittance address.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01027

NOTE: This Section 01030 "Supplemental Bids " includes description of Supplemental bids utilized when the Owner and the Architect/Engineer want to competitively bid additional work or bid a different product or system compared to a product or system specified as an integral part of the base project requirements. The submitted bid will be expressed ONLY AS A COST INCREASE to the base price. Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply. "Supplemental Bids "are also listed on the Bid Form in Division 0.

NOTE: ALL SUPPLEMENTAL BIDS MUST BE CROSSED REFERENCED BETWEEN THIS SECTION AND THE SECTION WHERE THE PRODUCT IS SPECIFIED AS CLEARLY SHOWN ON THE DRAWINGS AND IN THE SPECIFICATIONS "USE LIMIT LINES." SHOULD A SUPPLEMENTAL BID REQUIRE PRODUCTS NOT COVERED UNDER THE BASE BID THEN A SECTION MUST BE WRITTEN FOR SUCH PRODUCT AND BOUND IN THE PROJECT MANUAL. ALL SUPPLEMENTAL BIDS ARE TO BE PRIORITIZED BY THE AGENCY AND MUST BE LISTED NUMERICAL ORDER OF PREFERENCE FOR POSSIBLE INCLUSION IN THE WORK. **ALL SUPPLEMENTAL BIDS MUST BE ACCEPTED CUMMULATIVELY IN THE NUMERICAL ORDER LISTED AND NO SUPPLEMENTAL BID CAN BE SKIPPED OR ACCEPTED OUT OF NUMERICAL ORDER.**

NOTE: For all projects with an estimated construction value that equals or exceeds \$250,000.00, the Supplemental Bids must be reviewed to define if subcontractors are to be named. This would be applicable for sub-trades with an estimated value exceeding \$25,000.00. coordinate carefully with Division 0, Section 7(D), item 2, "Bid Proposal Form" for "Named Subcontractor". **AN ADDITIONAL SECTION MAY BE REQUIRED TO BE ADDED TO THE LIST OF NAMED SUBCONTRACTORS.**

The **header** and **footer** for each page of the Project Manual shall match the format, font (Times New Roman), size (11 pt), font style (**BOLD & CAPITALIZED**) and line borders, of the header and footer shown herein.. The **header** of each page shall contain the Section Number, the Section Title, and the page number & number of pages as shown herein. The **footer** shall contain the project number in the right hand side as shown herein, including the Table of Contents. Division 0 and 1 contain a revision date in the left side of the footer. This date is to remain as it is for Department informational purposes only and should not be altered by the Architect/Engineer.

DO NOT include Paragraphs or parts of Paragraphs in the project manual, which have no applicability to the specific project. KEEP IN NUMERICAL SEQUENCE, If A PART IS NOT USED OR ELIMINATED THEN RENUMBER THE FOLLOWING SECTIONS. IF A PART IS NOT APPLICABLE TO A SPECIFIC PROJECT THEN DESIGNATE IT AS (NOT APPLICABLE). Also, please review the General Conditions carefully and coordinate the requirements of those Articles including the Definitions.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing Supplemental Bids.
- B. Related Sections:
 - 1. Division 1 Section 01019 " Contract Considerations.
 - 2. Division 1 Section 01300 "Submittals".
 - 3. Division 1 Section 01600 "Materials & Equipment"

1.3 DEFINITIONS

NOTE: The definition below is a normal bidding situation with contractors stating supplemental bids amounts requested on the bid form. It also assumes that the owner will decide to accept or reject supplemental bids before signing the agreement. It also assumes that the bidding documents stipulate terms under which the owner will accept or reject the supplemental bids.

A. Definition: A Supplemental Bid is an amount proposed by bidders and stated on the Bid Proposal Form for certain work defined in the Bidding Documents that may be added to the Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. The cost for each supplemental bid is the net addition to the Contract Sum to incorporate the Supplemental Bid into the Work. Supplemental Bids are only accepted in the numerical order that they are listed on the Bid Proposal Form and never accepted out of numerical sequence. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

NOTE: Make certain it is clear on the Bid Form that costs listed for each supplemental bids include costs of related coordination, modification, or adjustment. If it is not clearly stated, revise below by stating this requirement.

A. Coordination: Modify or adjust affected adjacent Work as necessary to completely and fully integrate that Work into the Project.

1. Include as part of each Supplemental Bid, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not mentioned as part of the Supplemental Bid.

NOTE: Retain the requirement below on most projects. Failure to require notification could create problems later.

B. Execute accepted Supplemental Bids under the same conditions as other Work of this Contract.

C. Schedule: A "Schedule of Supplemental Bids" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials necessary to achieve the Work described under each Supplemental Bid.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 SCHEDULE OF SUPPLEMENTAL BIDS

NOTE: List Supplemental Bids here. Identify Supplemental Bids on Bid Proposal Form, Section 00020 of Division 0 to permit their inclusion in the Proposal. Supplemental Bids are selected at the Owner's option. Supplemental Bids will be listed in the Owner-Contractor Agreement in order of preference and identified by numbers. i.e., Supplemental Bid 1,2,3...etc.

NOTE: Below are some examples of supplemental bids. They demonstrate possible supplemental bid types. Revise suitable types as necessary to suit project requirements.

NOTE: Supplemental Bid No.1 is an example of a simple straightforward "supplemental bids that might necessitate additional specification sections to describe requirements adequately. Delete or edit and revise as require for specific project. Drawing information for Supplemental Bids should be bubbled or outlined for clarity.

- A. Supplemental Bid No. 1: ADD the complete Glycol Foil Heat Recovery Loops into the Project as specified in Section 15600. It is not included in the Base Bid.***

NOTE: Supplemental Bid No. 2 is an example of a simple straightforward supplemental bid. Delete or edit and revise as require for specific project.

- B. Supplemental Bid No 2: ADD the complete space improvements of the 4 laboratory quadrants and the support area as shown on _____ Drawing _____ for Floor Level _____ including all related mechanical and electrical systems, casework, finishes, etc. in order to fully complete the floor. The Base Bid has this area as being left unfinished.***

NOTE: Supplemental Bid No. 3 is an example of a cost comparison type Supplemental Bid where one product or construction method is proposed as a substitute for the product or method specified as part of the base bid. This type might require adding some specification sections to describe requirements adequately. Delete or edit and revise as require for specific project.

- C. Supplemental Bid No 3: ADD the complete space improvements of the 4 laboratory quadrants and the support area as shown on _____ Drawing _____ but for Floor Level _____ including all related mechanical and electrical systems, casework, finishes, etc. in order to fully complete the floor. The Base Bid has this area as being fully completed.***

END OF SECTION 01030

NOTE: The Section 01035 "Modification Procedures" includes detailed procedural requirements for considering change orders. Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

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DO NOT include Sections or parts of Sections in the project manual, which have no applicability to the specific project. KEEP IN NUMERICAL SEQUENCE. IF A SECTION IS NOT USED OR ELIMINATED THEN RENUMBER THE FOLLOWING SECTIONS. IF A SECTION IS NOT APPLICABLE TO A SPECIFIC PROJECT THEN DESIGNATE IT AS (NOT APPLICABLE). Also, please review the General Conditions carefully and coordinate the requirements of those Articles including the Definitions.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing contract modifications.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section 01019 "Contract Considerations" for administrative requirements governing use of Unit Prices.
 - 2. Division 1 Section 01300 "Submittals" for requirements for the Construction Schedule or CPM Schedule.

NOTE: Choose the appropriate Schedule section utilized for this project. Delete Section that is Not Applicable.

- 2. Division 1 Section 01310 "Construction Schedules" for requirements for the construction scheduling and reporting progress of work.

OR

- 3. Division 1 Section 01315 "CPM Schedules" for requirements for the CPM scheduling and reporting progress of work.
- 4. Division 1 Section 01027 "Applications for Payment" for administrative procedures governing Applications for Payment.
- 5. Division 1 Section 01631 "Equals and Substitutions" for administrative procedures for handling requests for substitutions made after award of the Contract.
- 6. General Requirements "Article 13" "Change Orders".

1.3 REQUESTS FOR INFORMATION

- A. In the event that the contractor or subcontractor, at any tier, determines that some portion of the drawings, specifications, or other contract documents requires clarification or interpretation by the

Architect, the contractor shall submit a "Request for Information" in writing to the Architect via Construction Administrator. "Requests for Information" may only be submitted by the contractor and shall only be submitted on the "Request for Information" forms as required by the owner.

1. In the "Request for Information", the contractor shall clearly and concisely set forth the issue for which clarification or interpretation is sought and why a response is needed from the Architect.
2. In the "Request for Information", the contractor shall set forth an interpretation or understanding of the requirement along with reasons why such an understanding was reached.
3. The owner acknowledges that this is a complex project. Based upon the owner's past experience with projects of similar complexity, the owner anticipates that there will probably be some "Requests for Information" on this project.
4. The Architect will review all "Requests for Information" to determine whether they are "Requests for Information" within the meaning of this term. If it is determined that the document is not a "Request for Information", it will be returned to the contractor, unreviewed as to content, for resubmittal on the proper form and in the proper manner.
5. A "Requests for Information Response" shall be issued within seven (7) Working Calendar Days of receipt of the request from the contractor unless the owner determines that a longer time is necessary to provide an adequate response. If a longer time is determined necessary by the owner, the owner will, within seven (7) Working Calendar Days of receipt of the request, notify the contractor of the anticipated response time. If the contractor submits a **"Request for Information"** on an activity with seven (7) Working Calendar Days or less of float on the current project schedule, the contractor shall not be entitled to any time extension due to the time it takes the Architect to respond to the request provided that the Architect responds within the seven (7) Working Calendar Days set forth above.
6. A "Requests for Information Response" from Architect will not change any requirement of the contract documents. In the event the contractor believes that the "Requests for Information Response" will cause a change to the requirements of the contract document, the contractor shall immediately give written notice to the Construction Administrator stating that the contractor believes the "Requests for Information Response" will result in "Change Order" and the Contractor intends to submit a "Change Order Proposal" request. Failure to give such written notice immediately shall waive the contractor's right to seek additional time or cost under the requirement these Requirements.

1.4 MINOR CHANGES IN THE WORK

- A. The Architect, through the Construction Administrator, will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or Contract Time, on the "Supplemental Instructions" form as required by the Owner.

1.5 PROPOSAL REQUEST

- A. Architect/Owner-Initiated Requests For Proposals: The Architect or Owner will issue a detailed description of proposed changes in the Work via the Construction Administrator that will require adjustment to the Contract Sum or Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications. Such requests shall be on a "Proposal Request" form as required by the owner.

1. A "Proposal Request" is issued for information only. Do not consider them as an instruction either to stop work in progress or to execute the proposed change.

NOTE: Revise the 14-day time period required below if necessary to suit project requirements.

2. Within (14) Working Calendar Days of receipt of a "Proposal Request", submit an "Change Order Proposal" with the required information necessary to execute the change to the Construction Administrator for the Architect's/Owner's review.
 - a. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include a statement indicating the effect the proposed change in the Work will have on the Contract Time.
 - d. The Agency is tax exempt. All Contractor and Subcontractor services provided under your contract with the State of Connecticut may not be exempt from taxes. The Department of Revenue Services can guide you as to which services are exempt and which are not. Please contact the State of Connecticut, Department of Revenue Services at 1-800-382-9463 or 860-541-3280.
 - e. Dollar values shown on the Schedule of Values shall not be the governing (or deciding) final amounts for change orders involving either additional charges or deletions.

1.6 CHANGE ORDER PROPOSAL

- A. When either a "Request for Information" from the Contractor or a "Proposal Request" from the Architect or Owner results in conditions that may require modifications to the Contract, the Contractor may propose changes by submitting a request for a "Change Order Proposal" to the Architect via the Construction Administrator on forms as required by the Owner. These forms shall also include "Change Order Proposal Worksheets" as required by the Owner.
 1. Include statements outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
 2. Include a list of quantities of products required and unit costs, with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities as directed by Article 13 of the General Conditions of the Contract for Construction.
 3. Indicate applicable delivery charges, equipment rental, and amounts of trade discounts.
 4. Comply with requirements in Division 1 Section 01631 "Equals and Substitutions" if the proposed change requires an equal or substitution of one product or system for a product or system specified.
 5. The State of Connecticut construction contract has the following tax exemptions:
 - a. Purchasing of materials which will be physically incorporated and become a permanent part of the project.
 - b. Tools, supplies and equipment used in fulfilling the construction contract are not exempt.
 - c. Services that are resold by the contractor are exempt, i.e. if a General Contractor hires a plumber, carpenter or electrician, a resale certificate may be issued to the subcontractor because these services are considered to be integral and inseparable component parts of the building contract
- C. "Change Order Request" Forms: Use "Change Order Proposal" and "Change Order Proposal Worksheets" forms as required by Owner.

- D. A "Change Order Proposal" cannot be submitted without the Contractor either prior submission of a "Request for Information" from the Contractor or as a response to a "Proposal Request" submitted by the Architect or Owner.
- E. Any "Change Order Request" submitted without a prior submittal of a "Request for Information" or as a response to a "Proposal Request" will be immediately rejected and returned to the Contractor.

1.7 CONSTRUCTION CHANGE DIRECTIVE

- A. "Construction Change Directive": When the Owner and the Contractor disagree on the terms of a "Change Order Proposal" resulting from either a "Request for Information" or "Proposal Request", then the Architect through the Construction Administrator may issue a "Construction Change Directive" on a "Construction Change Directive" as authorized by the Owner on the form required by the Owner. The "Construction Change Directive" instructs the Contractor to proceed with a change in the Work, for subsequent inclusion in a "Change Order"
 - 1. The "Construction Change Directive" contains a complete description of the change in the Work. It also designates the method to be followed to determine change in the Contract Sum or Contract Time.
- B. Documentation: The Contractor shall maintain detailed records on a time and material basis of work required by the "Construction Change Directive".
 - 1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.
 - 2. The final value shall be negotiated based on the supporting data to determine the value of the work.

1.8 CHANGE ORDER PROCEDURES

- A. Upon the Owner's approval of a Contractor's "Change Order Proposal", the Construction Administrator will issue a "Change Order" for signatures of the Architect, Owner and the Contractor on "Change Order" form as required by the Owner.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01035

NOTE: This Section 01040 "Coordination" includes requirements for general project coordination procedures, conservation, coordination of drawings, administrative and supervisory personnel, and cleaning and protection. Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and supervisory requirements necessary for coordinating construction operations including, but not necessarily limited to, the following:

NOTE: Delete requirements not included from the list below. Insert special requirements, as necessary.

1. General project coordination procedures.
2. Conservation.
3. Coordination Drawings, including Site Logistics Plans.
4. Administrative and supervisory personnel.
5. Cleaning and protection.

- B. Related Sections: The following Sections contain requirements that relate to this Section:

NOTE: Delete the 2 subparagraphs below if this section includes field engineering or project meetings. This section often includes these subjects on small projects.

1. Division 1 Section 01050 "Field Engineering" specifies procedures for field engineering services, including establishment of benchmarks and control points.
2. Division 1 Section 01200 "Project Meetings" for progress meetings, coordination meetings, and pre-installation conferences.

NOTE: Retain paragraph below that is the type of schedule used for the project. Delete Schedule type not applicable.

3. Division 1 Section 01310 "Construction Schedules".

OR

3. Division 1 Section 01315 "CPM Schedules".
4. Division 1 Section 01500 "Construction Facilities and Temporary Controls."

5. Division 1 Section 01600 "Materials and Equipment" for coordinating general installation.
6. Division 1 Section 01700 "Contract Closeout" for coordinating contract closeout.
7. Division 1 Section 01810 "Commissioning".
8. Division 17 Section 17100 "Commissioning Requirements", defines the commissioning process.

1.3 CONSTRUCTION ADMINISTRATOR

A. Construction Administrator:

1. The Construction Administrator is identified in Division 1 Section 01010 "Summary of Work".
2. Construction Mobilization:
 - a. Cooperate with the Construction Administrator in the allocation of mobilization areas of the site, for field offices and sheds, for agency facility access, traffic, and parking facilities.
 - b. During Construction, coordinate use of site and facilities through the Construction Administrator.
 - c. Comply with Construction Administrators procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.

NOTE: Responsibility for providing temporary utilities and construction facilities is identified in Section 01010 Summary of Work. Delete or revise and edit paragraphs below as required for specific project.

- d. Comply with instructions of the Construction Administrator for use of temporary utilities and construction facilities.
- e. Coordinate field engineering layout as specified in Division 1 Section 01050 "Field Engineering" for work under the instructions of the Construction Administrator.

1.4 COORDINATION

- A. Coordinate construction operations included in various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections that depend on each other for proper installation, connection, and operation.
 1. Schedule construction operations in the sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.
 3. Make provisions to accommodate items scheduled for later installation.
- B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
 1. Prepare similar memoranda for the Construction Administrator, Owner and separate contractors where coordination of their work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

NOTE: Insert other administrative activities needed to suit project requirements.

1. Preparation of schedules.
2. Installation and removal of temporary facilities.
3. Delivery and processing of submittals.
4. Progress meetings.
5. Project closeout activities.

1.5 SUBMITTALS

- A. Coordination Drawings: Prepare coordination drawings to complete detailed coordination of systems and components and to integrate information about fabrication and installation.
1. Thoroughly prepare coordination drawings, as further stipulated in Part 3, "Execution", reviewing all contract documents and consulting with all entities contributing to or involved with each portion of the work under consideration.
 - a. Show the relationship of all components shown on any separate Shop Drawings.
 - b. Indicate required desired installation sequences.
 - c. Comply with requirements contained in Division 1 Section 01300 "Submittals".
 2. Prepare coordination drawings for installation of all products and materials fabricated by separate entities.

NOTE: Edit paragraph examples for the project.

3. *Prepare coordination drawings where limited space availability necessitates maximum utilization of space for efficient installation of different components, including but not limited to: all site-utility entry points; all ceiling and roof cavities in all areas; all electrical, telecommunications and mechanical rooms; all stage-boundary interface areas; all laboratories, animal-handling rooms and data rooms; all classrooms and seminar rooms; all lecture halls and their support spaces; all video studios, broadcast classrooms and their support facilities; and all such other conditions required to coordinate the work.*
4. Prepare a Site Logistics Plan(s) showing: The entire project area and limits; all routes into and out of site; all staging and stockpiling and lay-down areas; all aspects of phasing/staging; all parking, paving and fencing; and all specific provisions to satisfy requirements of Division 1 Sections, including but not limited to Field Engineering and Construction Facilities and Temporary Controls. The Site Logistics Plan shall coincide with and complement the general staging plans and site plans outlined in the contract bidding documents. It is intended that the General Contractor shall present this refined plan for approval by the Construction Administrator. The fencing shown on this plan is required for all phases. Exact placement and timing of installations and removals will be reviewed and approved by the Construction Administrator prior to implementation. Specified in Division 2 is an additional allotment of various fencing, which the Contractor shall provide, install, and relocate at various intervals, for installation and removal by the General Contractor per the direction of the project's Construction Administrator. This staging and logistics plan will require refinement and change for each phase/stage of the project. The Site logistics Plan(s) shall be drawn at a scale no smaller than 1"=40' and shall be submitted as stipulated in Division 1 Section "Applications for Payment", but in now case later than (30) days after Notice to Proceed.
5. Prepare coordination drawings showing locations of surface recesses and voids, as well as offsets and breaks, requiring filling and/or feathering, both those initially visible and those discovered during the course of work. Review with Owner and Architect to obtain direction for filling and feathering. Revise drawing(s) to record directions for same for field and record purposes.

- B. Staff Names: Prior to the contract start date, submit a list of the Contractor's principal staff assignments, including the superintendent, project safety officer, and other personnel in attendance at the Project Site. Identify individuals and their duties and responsibilities. List their addresses and telephone numbers.
1. Post copies of the list in the Project meeting room, the temporary field office, and each temporary telephone.
 2. Provide resumes of each staff member proposed for the project. This shall include the Project Manager, Project Superintendent and Safety Officer.

NOTE: Insert special requirements for the superintendent and assistants that exceed requirements contained in General and Supplementary Conditions.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL COORDINATION PROVISIONS

- A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed and coordinate such inspections with the Construction Administrator and authorities having jurisdictions. If unsatisfactory conditions exist notify the Construction Administrator immediately. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
- B. The Contractor shall coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.
- C. Coordination Drawings: Before construction work can begin, the Contractor shall submit to the Architect coordination drawings in the form of (a) reproducible (vellum) transparencies at not less than 1/4-inch scale and (b) CAD files of the coordination drawings on CDROM. Such drawings will be required throughout all areas for trades as described below. These drawings shall show resolutions of trade conflicts in congested areas. The Architect will supply base drawings (with the title blocks removed), including floor plans, reflected ceiling plans, and structural framing plans, in the form of electronic CAD files on CDROM, using the AutoCAD release edition specified with the files, to the General Contractor for distribution to the trades for use in developing the coordination drawings. Each trade contractor shall create separate layers within the CAD files to show the work of their trade. Prepare coordination drawings as follows:
1. The HVAC subcontractor shall initiate 1/4-inch scale drawings done on AutoCAD (latest version) showing ducts and piping in plan and section. Sheet metal shop drawings must be approved prior to starting coordination drawings.
 2. The Sprinkler subcontractor shall then add layers to superimpose his piping layout on the coordination drawings.
 3. The Electrical subcontractor shall then add layers to superimpose all the electrical information on the coordination drawings. Said information is to include but not necessarily be limited to cable trays, equipment, lighting, conduits, bus duct, etc. Show space allowances reserved for work under other contracts, such as audio-visual wiring and equipment.
 4. The Plumber subcontractor shall then add layers to complete the coordination drawing by drawing his piping (including pitch) on the coordination drawings.

5. Contractors for specialties, furnishings, equipment and special construction shall add layers to show their work to assure full coordination of all systems.
 6. The Construction Administrator shall review the completed coordination drawings for general compliance and then submit them to the Architect for his review. All subcontractors shall rework the drawings until all systems are properly coordinated.
 7. The Ceiling subcontractor shall utilize the drawings to prepare acoustic panel ceiling drawings and any other suspended ceiling drawings, and shall indicate areas of conflict with the work of other trades by drafting the location of grids, panels and tiles.
 8. The General Construction Contractor shall indicate Architectural/Structural conflicts or obstacles and coordinate to suit the overall construction schedule. The Contractor shall locate all precut and prefabricated holes and openings in structural steel on the CAD coordination drawing files as required for HVAC, plumbing, fire protection and electrical work. The Contractor shall coordinate these holes and openings with the structural steel fabricator during the structural steel shop drawing development phase. Coordination to take place on schedule so as to permit shop fabrication of all structural steel holes and openings. The Owner will not be held responsible for the costs associated with field fabrication of structural openings resulting from the lack of timely and thorough coordination.
 9. The General Construction Contractor shall expedite all drawing work and coordinate to suit the construction schedule. The General Construction Contractor shall then review these drawings and compare them with the Architectural, Structural, Equipment, and other drawings and determine that all of the work can be installed without undue interference. Prior to the submittal to the Architect, areas of potential conflict shall be brought to the attention of the General Contractor who shall convene a coordination meeting of all parties involved, for the purpose of resolving all utility conflicts. The General Contractor shall supervise and direct corrective measures and have all trades sign acceptance of the drawings. Submit (4) four hard copies of each drawing to the Architect and (2) copies to the Construction Administrator for the record, and only after all conflicts have been accommodated.
 10. If the coordination meeting fails to resolve coordination conflicts, the General Contractor shall indicate the nature of such conflicts in a detailed RFI, proposing the most economical solution.
 11. Trades work in a given bay or area should not proceed until all trades foreman agree on the exact arrangements for each room or area. If a given trade proceeds prior to trades approval, then if necessary, that trade shall revise their work, if necessary, at no extra cost, in order to permit others to proceed.
 12. Submit all coordination drawings on CD-ROM, in addition to hard copy.
- D. The Construction Administrator will meet with the Contractor on all major items of coordination.

3.2 CLEANING AND PROTECTION

NOTE: Provisions in the next article reduce or eliminate the need for similar provisions in other sections. Insert provisions needed because of unusual project conditions. Specify unusual provisions for specific work in the individual unit of work section.

- A. Clean and protect construction in progress and adjoining materials in place, during handling and installation. Apply protective covering, where required, to assure protection from damage or deterioration.
- B. Clean and provide maintenance on completed construction as construction per manufacturers requirements through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.

- C. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

NOTE: Delete items from the list below that are not appropriate for the project. Add items to suit project requirements.

1. Excessive static or dynamic loading.
2. Excessive internal or external pressures.
3. Excessively high or low temperatures.
4. Thermal shock.
5. Excessively high or low humidity.
6. Air contamination or pollution.
7. Water or ice.
8. Solvents.
9. Chemicals.
10. Light.
11. Radiation.
12. Puncture.
13. Abrasion.
14. Heavy traffic.
15. Soiling, staining, and corrosion.
16. Bacteria.
17. Rodent and insect infestation.
18. Combustion.
19. Electrical current.
20. High-speed operation.
21. Improper lubrication.
22. Unusual wear or other misuse.
23. Contact between incompatible materials.
24. Destructive testing.
25. Misalignment.
26. Excessive weathering.
27. Unprotected storage.
28. Improper shipping or handling.
29. Theft.
30. Vandalism.

END OF SECTION 01040

NOTE: This Section 01045 "Cutting and Patching" includes requirements for incidental cutting, fitting and patching required to complete the Work or to make its several parts fit together properly. This section is NOT intended to be as comprehensive as may be required for an extensive alteration or renovation project. Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

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DO NOT include Paragraphs or parts of Paragraphs in the project manual, which have no applicability to the specific project. KEEP IN NUMERICAL SEQUENCE. IF A PART IS NOT USED OR ELIMINATED THEN RENUMBER THE FOLLOWING SECTIONS. IF A PART IS NOT APPLICABLE TO A SPECIFIC PROJECT THEN DESIGNATE IT AS (NOT APPLICABLE). Also, please review the General Conditions carefully and coordinate the requirements of those Articles including the Definitions.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for cutting and patching.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section 01040 "Coordination" for procedures for coordinating cutting and patching with other construction activities.
 - 2. Division 1 Section 01120 "Alteration Project Procedures" for procedures for coordinating cutting and patching with other construction activities.

NOTE: Insert "Selective Demolition" or "Minor Demolition" or other section title as appropriate for demolition section title used in Division 2. Delete the subparagraph below if demolition for alterations are not required.

- 3. Division 2 Section ____ for demolition of selected portions of the building for alterations.

NOTE: The subparagraph below is appropriate to items in many other sections.

- 4. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

NOTE: Delete the subparagraph below if special cutting and patching requirements by mechanical and electrical trades are not required.

- a. Requirements of this Section apply to mechanical and electrical installations. Refer to Division 15 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

1.3 SUBMITTALS

NOTE: Modify the paragraphs below to include other desired submittal requirements. Revise if Owner Representative or Architect/Engineer approval of cutting and patching procedures is not required.

- A. Cutting and Patching Proposal: Submit a proposal to the Construction Administrator describing procedures well in advance of the time cutting and patching will be performed and if the Owner Representative and/or Architect/Engineer requires approval of these procedures before proceeding. Request approval to proceed. Include the following information, as applicable, in the proposal:
1. Describe the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.
 2. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
 3. Describe affects to integrity of weather exposed or moisture resistant element.
 4. Describe affects to efficiency, maintenance, or safety of any operational element.
 5. Describe affects to Work of Owner or separate contractor.
 6. List products to be used and firms or entities that will perform Work.
 7. Indicate dates when cutting and patching will be performed.

NOTE: Delete the subparagraph below if utilities are not affected by cutting and patching. Amplify with subparagraphs to include special requirements if necessary to suit project requirements.

8. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.

NOTE: The subparagraphs below shift responsibility for cutting and patching structural Work to the contractor. Revise as necessary to suit project requirements. Be careful not to violate State Building Codes on structural engineering responsibility.

9. Where cutting and patching involves adding reinforcement to structural elements, submit details and engineering calculations sealed by an Engineer registered in the State of Connecticut showing integration of reinforcement with the original structure.
10. Approval by the Construction Administrator to proceed with cutting and patching does not waive the Architect/Engineer of Record rights to later require complete removal and replacement of unsatisfactory Work.

1.4 QUALITY ASSURANCE

NOTE: Modify the paragraphs below to include other desired submittal requirements. Revise if Architect/Engineer approval of cutting and patching procedures is not required.

- A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.
1. Obtain approval from the Architect/Engineer's of the cutting and patching proposal before cutting and patching the following structural elements:

NOTE: Revise the listed examples below to reflect the project's structural elements.

- a. *Foundation construction.*
- b. *Bearing and retaining walls.*
- c. *Structural concrete.*
- d. *Structural steel.*
- e. *Lintels.*

- f. Structural decking.*
- g. Miscellaneous structural metals.*
- h. Exterior curtain-wall construction.*
- i. Equipment supports.*
- j. Piping, ductwork, vessels, and equipment.*
- k. Structural systems of special construction in Division 13 Sections.*

- B. Operational Limitations: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.

NOTE: Modify the paragraphs below to include other desired submittal requirements. Revise if Architect/Engineer approval of cutting and patching procedures is not required.

1. Obtain Architect/Engineer's approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:

NOTE: Revise the listed examples below to reflect the project's operating systems.

- a. Primary operational systems and equipment.*
 - b. Air or smoke barriers.*
 - c. Water, moisture, or vapor barriers.*
 - d. Membranes and flashings.*
 - e. Fire protection systems.*
 - f. Noise and vibration control elements and systems.*
 - g. Control systems.*
 - h. Communication systems.*
 - i. Conveying systems.*
 - j. Electrical wiring systems.*
 - k. Operating systems of special construction in Division 13 Sections.*
- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction cut and patched in a visually unsatisfactory manner.

1.5 WARRANTY

- A. Existing Warranties: Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used. Use materials whose installed performance will equal or surpass that of existing materials.

- B. The Contractor shall install sleeves, inserts and hangers furnished by the trades needing same.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, notify the Construction Administrator and Architect, before proceeding with corrective action.
- B. Openings and chases may not be shown on the Drawings. It is the responsibility of the Contractor to examine the Architectural, Electrical, Heating, Cooling, Ventilating and Plumbing Drawings and to provide chases, channels or openings where needed.
 - 1. After installing Work into openings, channels and/or chases, the Contractor shall close same. If finishes are to be restored, the new Work shall match the original and shall be done by the trade customarily responsible for the particular kind of Work.
- C. The Contractor shall verify dimensions for built-in Work and/or Work adjoining that of other trades before ordering any material or doing any Work. Discrepancies shall be submitted to the Construction Coordinator before proceeding with the Work.
- D. See also General Conditions Article 23 "Cutting, Fitting, Patching & Digging".

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Work that might be exposed during cutting and patching operations.
- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Avoid cutting existing pipe, conduit, or ductwork serving the building but scheduled to be removed or relocated until provisions have been made to bypass them.

3.3 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
 - 2. DO perform cutting and patching to integrate elements of Work. Provide penetrations of existing surfaces. Provide samples for testing. Seal penetrations through floors, walls, ceilings and roofs, as applicable; restore or preserve fire-rated and smoke-barrier construction. Construction and finishes shall match original Work
- B. Cutting: Cut existing construction using methods least likely to damage elements retained or adjoining construction. Where possible, review proposed procedures with the original Installer; comply with the original Installer's recommendations.
 - 1. In general, where cutting, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

2. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
3. Cut through concrete and masonry using a cutting machine, such as a Carborundum saw or a diamond-core drill.
4. Comply with requirements of applicable Division 2 Sections where cutting and patching requires excavating and backfilling.

NOTE: Coordinate the subparagraph below with Divisions 15 and 16 to avoid duplication or conflicts. Delete if requirements are included in Divisions 15 and 16. Modify to suit project requirements if retained.

5. Where services are required to be removed, relocated, or abandoned, by-pass utility services, such as pipe or conduit, before cutting. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.
- C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
 2. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

NOTE: Insert specific refinishing requirements for floors, walls, and ceilings. Revise subparagraphs below to suit project requirements.

3. Where removing walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch after the area has received primer and second coat.

NOTE: Delete or modify the subparagraph below as necessary to suit project requirements.

4. Patch, repair, or re-hang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.4 CLEANING

- A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

END OF SECTION 01045

NOTE: The Section 01050 "Field Engineering" includes requirements for contractor provision of survey and field engineering services for a project. If multiple contracts, responsibility for Work of this section should be identified in Section 01010 "Summary of Work". Delete them if they do not apply.

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

NOTE: Revise paragraph below if the project is constructed under multiple prime contracts.

- A. General: This Section specifies administrative and procedural requirements for field-engineering services including, but not limited to, the following:

NOTE: Delete engineering services not required. Civil and structural engineering services in this section are basic requirements only. Include special requirements, such as concrete form-work design or hydraulic design for control of groundwater, in the appropriate specification section. Add or delete examples as applicable.

1. Land survey work.
2. Civil Engineering services.
3. Damage surveys.
4. Geo-technical monitoring.

- B. Related Sections: The following Sections contain requirements that relate to this Section:

NOTE: Revise sub-paragraph below if the project is constructed under multiple prime contracts.

1. Division 1 Section 01040 "Coordination" for procedures for coordinating field engineering with other construction activities.
2. Division 1 Section 01300 "Submittals" for submitting Project record surveys.

NOTE: Revise subparagraph below to suit project requirements.

3. Division 1 Section 01700 "Project Closeout" for submitting final property survey with Project Record Documents and recording of Owner-accepted deviations from indicated lines and levels.

1.3 SUBMITTALS

NOTE: Revise subparagraphs below to suit project requirements.

- A. Certificates: Submit a certificate from his Land Survey stating that the control information furnished by the Owner, is accurate or shall identify inaccuracies, if they exist. The Contractor shall not take advantage of errors, which may be included in the control information. Stakes and markings shall be preserved.
- B. Final Property Survey: Prepare and submit 10 copies of the final property survey.
- C. Project Record Documents: Submit a record of Work performed and record survey data as required under provisions of "Submittals" and "Project Closeout" Sections.

1.4 QUALITY ASSURANCE

NOTE: Revise subparagraphs below to suit project requirements.

- A. Provide field engineering services to establish and record grades, lines and elevations.
- B. The Contractor shall retain a Land Surveyor registered by the State of Connecticut to confirm State furnished base lines and benchmarks, lay out the building, underground utility lines and other site work from the information furnished by the Owner and to establish and record the necessary elevations, at no additional cost to the State.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Identification: The Owner will identify two base lines on the Contract Drawings.
- B. Verify layout information shown on the Drawings, in relation to the property survey and existing benchmarks. Notify the Construction Administrator of any discrepancies immediately in writing, before proceeding to lay out the Work. Locate and protect existing benchmarks and base line. Preserve permanent reference points during construction.
 - 1. Do not change or relocate benchmarks or base line without prior written approval. Promptly report lost or destroyed reference points or requirements to relocate reference points because of necessary changes in grades or locations.
 - 2. Promptly replace lost or destroyed Project baseline benchmarks. Base replacements on the original survey control points.

NOTE: Revise paragraphs below to reflect the number of permanent benchmarks required to accommodate project requirements.

- C. Establish and maintain a sufficient quantity of (minimum of 2 permanent) benchmarks on the site, referenced to data established by Owner supplied information.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

NOTE: Revise paragraph and subparagraph below as necessary to suit project requirements. Check with local authorities and utility companies. Coordinate with Division 2 Sitework sections.

- D. Existing Utilities and Equipment: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction.

1. Prior to construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping. Notify the Construction Administrator of any discrepancies prior to proceeding.

3.2 PERFORMANCE

- A. Work from lines and levels established by the property survey. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of the Project. Calculate and measure required dimensions within indicated or recognized tolerances. Do not scale Drawings to determine dimensions.
 1. Advise entities engaged in construction activities of benchmarks and control points for their use.
 2. As construction proceeds, check every major element for line, level, and plumb.
- B. Surveyor's Log: Maintain a surveyor's log of control and other survey work. Make this log available for reference.
 1. Record deviations from required lines and levels, and advise the Construction Administrator when deviations that exceed indicated or recognized tolerances are detected. On Project Record Drawings, record deviations that are accepted and not corrected.

NOTE: Retain subparagraph below to suit project requirements.

2. On completion of foundation walls, major site improvements, underground utilities, and other Work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, elevations of construction, as-built locations and sitework.
- C. Site Improvements: Locate and lay out site improvements, including pavements, stakes for grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out batter boards for structures, building foundations, column grids and locations, floor levels, and control lines and levels required for mechanical and electrical work.

NOTE: Revise paragraphs below to suit project requirements.

- E. Existing Utilities: Furnish information necessary to adjust, move, or relocate existing structures, utility poles, lines, services, or other appurtenances located in or affected by construction. Coordinate with local authorities having jurisdiction.
- F. Final Property Survey: Prepare a final property survey showing significant features (real property) for the Project. Include on the survey a certification, signed by the surveyor, that principal metes, bounds, lines, and levels of the Project are accurately positioned as shown on the survey.

NOTE: Insert other special field-engineering requirements as needed, such as damage surveys, settlement surveys and reports, environmental impact surveys, and similar requirements.

END OF SECTION 01050

NOTE: This Section 01095 "Reference Standards and Definitions" includes requirements for compliance with reference standards used in the project manual and for requiring copies of standards at site and definitions of terms that are not defined in the general conditions. Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 DEFINITIONS

NOTE: Terms defined below are not defined in the General Conditions. Delete this entire article or selected paragraphs in the article if definitions below are included elsewhere in the project manual or are not required.

- A. General: Basic contract definitions are included in the General Conditions of the Contract for Construction.
- B. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on the Drawings, or other paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the reader locate the reference. Location is not limited to this term.

NOTE: When using terms such as the ones in the 2 paragraphs below, do not extend the Architect's responsibility into the contractor's area of means, methods, and techniques of construction.

- C. "Directed": Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by the Architect, requested by the Architect, and similar phrases.
- D. "Approved": The term "approved," when used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.
- E. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

NOTE: Avoid modifying 3 paragraphs below because of the widespread acceptance and understanding of the terms as defined.

- F. "Furnish": The term "furnish" means supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": The term "install" describes operations at the Project Site including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.

NOTE: Retain paragraph below where "quality assurance" articles in other sections include paragraphs specifying installer qualifications. Delete if use of the term is prohibited.

I. "Installer": An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.

NOTE: Revise the number of projects in subparagraph below to suit owner's requirements. Delete if experience requirements are included in individual sections of the specifications. Modify minimum number of previous project experience as required for specific installer.

1. The term "experienced," when used with the term "installer," means having a minimum of (5) five previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of authorities having jurisdiction.

NOTE: Generally retain subparagraph below. It is helpful to avoid unreasonable claims.

2. Trades: Using terms such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

NOTE: Delete subparagraph below unless other specification sections assign certain items of Work to pre-selected contractors (specialists). Modify if necessary to suit project.

3. Assigning Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.

- a. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.

NOTE: Generally retain paragraph below but modify to suit project.

J. "Project Site" is the space available to the Contractor for performing construction activities, either exclusively or in conjunction, with others performing other Work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.

K. "Testing Agencies": A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.3 SPECIFICATION FORMAT AND CONTENT EXPLANATION

NOTE: Delete this article or portions of this article if information is unnecessary. Delete or revise entirely if CSI'S 16-Division format is not used.

- A. Specification Format: These Specifications are organized into Divisions and Sections based on CSI's 16-Division format and MasterFormat's numbering system.

Note: If necessary, insert paragraphs explaining the section-numbering and page-numbering systems used. If necessary, add an explanation of line-numbering or alphanumeric paragraph-outline system used in the specification and the method of text subordination.

- B. Specification Content: This Specification uses certain conventions regarding the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:

1. Abbreviated Language: Language used in Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated, as the sense requires. Singular words will be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Streamlined Language: The Specifications generally use the imperative mood and streamlined language. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor or by others when so noted.
 - a. The words "shall be" are implied where a colon (:) is used within a sentence or phrase.

1.4 INDUSTRY STANDARDS

- A. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

NOTE: Retain paragraph below unless the entire specification is edited to insert dates (though this is not recommended) and un-referenced standards are not applicable. Revise the date established below to comply with project requirements.

- B. Publication Dates: Comply with the standards in effect as of the date of the Contract Documents.

NOTE: Paragraph below may resolve problems that sometimes arise using reference standards.

- C. Conflicting Requirements: Where compliance with 2 or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer to the Architect before proceeding for a decision on requirements that are different but apparently equal, and where it is uncertain which requirement is the most stringent.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum acceptable. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Architect for a decision before proceeding.

- D. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source.

- E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authorities having jurisdiction, or other entity applicable to the context of the text provision. Refer to Gale Research Co.'s "Encyclopedia of Associations," available in most libraries.

1.5 GOVERNING REGULATIONS AND AUTHORITIES

NOTE: Amend dates of the below regulations based upon the either the date of the certificate of compliance for all Non-Threshold projects or the permit application date for all Threshold projects.

- A. Copies of Regulations: Obtain copies of the following regulations and retain at the Project Site to be available for reference by parties who have a reasonable need during submittals, planning, and progress of the Work, until Substantial Completion.
1. Connecticut State Building Code/1994.
 2. BOCA National Building Code 1990 including 1992 Accumulative Supplement.
 3. BOCA National Mechanical Code 1990 including 1992 Accumulative Supplement.
 4. BOCA National Plumbing 1990 including 1992 Accumulative Supplement.
 5. National Electric Code NFPA 70-1993.
 6. Connecticut Fire Safety Code/1994.
 7. NFPA 101-1991.

1.6 SUBMITTALS

NOTE: Retain general requirements in paragraph below. Specific submittals may be specified in other sections.

- A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01095

NOTE: This Section 01120 "Alteration Project Procedures" includes requirements for performing alteration and renovation Work applicable to all sections of involved in the alterations and procedures for salvageable materials. Coordinate this section with Division 2 "Selective Demolition" or "Minor Demolitions" or any other sections from Divisions 2 through 16 relating to alteration and renovation Work should specifically reflect this Section. This Section requires close coordination with drawings and should define scope of Work in the fullest possible detail. General, broad statements in this section may be interpreted to require more Work than intended, adding to the construction costs unnecessarily, and must be carefully to reflect specific project requirements, or delete them if they do not apply.

The **header and footer** for each page of the Project Manual shall match the format, font (Times New Roman), size (11 pt), font style (**BOLD & CAPITALIZED**) and line borders, of the header and footer shown herein. The **header** of each page shall contain the Section Number, the Section Title, and the page number & number of pages as shown herein. The **footer** shall contain the project number in the right hand side as shown herein, including the Table of Contents. Division 0 and 1 contain a revision date in the left side of the footer This date is to remain as it is for Department informational purposes only and should not be altered by the Architect/Engineer.

DO NOT include Paragraphs or parts of Paragraphs in the project manual, which have no applicability to the specific project. KEEP IN NUMERICAL SEQUENCE, IF A PART IS NOT USED OR ELIMINATED THEN RENUMBER THE FOLLOWING SECTIONS. IF A PART IS NOT APPLICABLE TO A SPECIFIC PROJECT THEN DESIGNATE IT AS (NOT APPLICABLE). Also, please review the General Conditions carefully and coordinate the requirements of those Articles including the Definitions.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for performing alteration and renovation Work.
- B. Related Sections: The following Sections contain requirements that relate to this Section:

NOTE: Include one or more of the following referenced sections are utilized.

- 1. Division 1 Section 01040 "Coordination" for procedures for coordinating cutting and patching with other construction activities.

NOTE: Edit and or delete the subparagraph below if cutting and patching is not required and the "cutting and patching" section is not used.

- 2. Division 1 Section 01045 "Cutting and Patching" for procedures for cutting and patching.

NOTE: Insert the name of the division 2 demolition section in paragraph below. Delete the subparagraph below if demolition is not required and a demolition" section is not used.

- 3. Division 2 Section ____ for demolition of selected portions of the building for alterations.

NOTE: The subparagraph below is appropriate to items in many other sections.

- 4. Refer to other Sections for specific requirements and limitations applicable to performing alteration Work with individual parts of the Work.

NOTE: Delete the subparagraph below if alteration and renovation Work requirements by mechanical and electrical trades are not required.

- a. Requirements of this Section apply to mechanical and electrical installations. Refer to Division 15 and Division 16 Sections for other requirements and limitations applicable to renovations Work by mechanical and electrical installations.

PART 2 - PRODUCTS

2.1 PRODUCTS FOR PATCHING AND EXTENDING WORK

- A. New materials: As specified in product sections; match existing Products and Work for patching and extending Work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing Products where necessary, referring to existing Work as a standard.

2.2 SALVAGEABLE MATERIALS

NOTE: On alteration, renovation, demolition and replacement Work, the ownership of the salvageable materials should be investigated and a statement as to whose property it becomes should always be included in the Specifications. Edit, and add or delete from examples of salvageable items listed below. If the State or an Agency is to salvage any items then include the location where agency will storage is to be provided.

- A. The Contractor shall be responsible for removing the following salvageable items from premises and transporting said items to __ on __, CT __.

1. *Equipment:*
2. *Windows:*
3. *Doors:*
4. *Door Hardware:*
5. *Fixtures:*
6. *Art:*

NOTE: Insert the name and location of the agency facility where salvageable are to be stored. Also insert the name the agency whose personnel responsible for directing contractor where salvageable materials are to be stored.

- B. The Contractor shall notify the Construction Administrator in writing (7) seven Calendar Days prior to removing all salvageable items from the existing alteration project location and unloading all salvageable items at __, __, Connecticut __ and store items in the appropriate location as directed by __ personnel.

PART 3 - EXECUTION

3.1 INSPECTION

- A. General;
1. Verify that demolition is complete and areas are ready for installation of new Work.
 2. Beginning of restoration Work means acceptance of existing conditions.

NOTE: Include the following Sections and paragraphs for all facilities that have Work Involving Lead Containing Material. Edit and or delete paragraphs as required for specific project.

- B. Project Procedures for Work Involving **Lead Containing Material (LBP):**

1. Exposure levels for lead in the construction industry are regulated by 29 CFR 1926.62. Construction activities disturbing surfaces containing lead-based paint (LBP) which are likely to be employed, such as sanding, grinding, welding, cutting and burning, have been known to expose workers to levels of lead in excess of the Permissible Exposure Limit (PEL). Conduct demolition and removal Work specified in the technical sections of this specification in conformance with these regulations. In addition, construction debris/waste may be classified as hazardous waste. Disposal of hazardous waste material shall be in accordance with 40 CFR Parts 260 through 271 and Connecticut Hazardous Waste Management Regulations Section 22a-209-1; 22a-209-8(c); 22a-449(c)-11; and 22a-449(c)-100 through 110.

NOTE: Include the following paragraph for all facilities in which children under six years old reside.

2. The Contractor's Work shall be based on a child under the age of six (6) in residence; the Work shall also be in accordance with Connecticut Regulations Section 19a-111-1 through 11.

NOTE: Include the following paragraph for all facilities constructed prior to 1978.

3. This facility was constructed prior to 1978 and is likely to have painted surfaces containing lead-based paint.

NOTE: DPW Project Managers should make arrangements for lead inspections by submitting requests to the DPW Asbestos Management Unit. When the facility has been inspected for the presence of lead-based paint, insert the following paragraph.

4. Testing for lead-based paint has been conducted at the facility scheduled for renovation, demolition, reconstruction, alteration, remodeling, or repair. Results of the LBP testing are for information purposes only. The results are in this Project Manual. Under no circumstance shall this information be the sole means used by the Contractor for determining the extent of LBP. The Contractor shall be responsible for verification of all field conditions affecting performance of the Work.

NOTE: Include the following Sections and paragraphs for all facilities in reference to Asbestos Containing Material (ACM) disclosure and removal.

C. Project Procedures for Work Involving **Asbestos Containing Material (ACM)**

1. The Owner is responsible for abating all ACM that is visible and accessible. This is to be accomplished through a separate project prior to the start of the renovation project. In demolition projects, every attempt should be by the owner to remove all ACM.

NOTE: An Owner 24 hour response and testing time and (7) seven Calendar Days abatement time is included in the paragraph below, if different response time is required, edit and insert a **reasonable** time period into paragraphs. The State cannot guarantee any time period for inspection, testing and removal (if necessary). Edit and or delete paragraphs as required for specific project.

2. If the Contractor should encounter any material suspect or known to contain ACM, he should immediately notify the Construction Administrator of same. It is the State's responsibility to have the material tested and abated (if necessary). The Owner will respond within (24) twenty-four hours after receiving the Contractor's written request to the Construction Administrator for testing the suspect material. The Owner will abate ACM (if necessary) within a reasonable time period, i.e. with (7) seven Working Calendar Days.
3. Testing for asbestos has been conducted at the facility scheduled for renovation, demolition, reconstruction, alteration, remodeling, or repair. Results of the asbestos testing are for information purposes only. The results are in this Project Manual. Under no circumstance shall this information be the sole means used by the Contractor for determining the extent of asbestos. The Contractor shall be responsible for verification of all field conditions affecting performance of the Work.

D. Project Procedures for Work Involving Products Containing Persistent Bioaccumulative Toxic Chemicals” (PBT’s) such as Polychlorinated Biphenols (PCB’s), Di-2-ethylhexyl Phthalate (DEHP), and Mercury:

1. The Contractor is responsible for abating all PCB’s, DEHP, and mercury prior to the start any work involving construction, renovation or demolition (if necessary).
2. Exposure Levels for Products Containing Persistent Bioaccumulative Toxic Chemicals (PBT’s) such as PCB’s, DEHP, and mercury in the construction industry is regulated by 29CFR1910.1200 and 29CFR1926.28 et. al. Construction, renovation or demolition activities disturbing Products Containing Persistent Bioaccumulative Toxic Chemicals” (PBT’s) such as PCB’s and DEHP which are likely to be employed. These materials include but are not limited to fluorescent light fixture & exit sign, ballasts, high density discharge (HID) lamps , and certain types of construction products containing vinyl, and mercury containing electrical switches and thermostats. These activities may expose workers in excess of the respective Permissible Exposure Limit (PEL). Conduct demolition and removal Work specified in the technical sections of these specifications in conformance with these regulations. In addition construction debris/waste may be classified as hazardous waste. Disposal of all hazardous materials shall be in accordance with but not limited to 40CRF Parts 761 Subpart K, 761, and 761.65 and the Connecticut General Hazardous Waste Statute Sec. 22a-454.
3. A Survey for Products Containing Persistent Bioaccumulative Toxic Chemicals (PBT’s) such as PCB’s, DEHP and Mercury has NOT been conducted at the facility. Examples include but are not limited to fluorescent light fixture & exit sign, ballasts, high density discharge(HID) lamps , and certain types of construction products containing vinyl, and mercury containing electrical switches and thermostats. It is the Contractors responsibility for verification of all material and field conditions prior to construction, renovation, and demolition that may affect the performance of their Work.

E. See also General Conditions Article 23 “Cutting, Fitting, Patching and Digging.”

3.2 PREPARATION

- A. Cut, move, or remove items as are necessary for access to alterations and renovation Work. Replace and restore at completion.
- B. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- C. Remove debris and abandoned items from area and from concealed spaces.
- D. Prepare surface and remove surface finishes to provide for proper installation of new Work and finishes.

NOTE: Include salvageable items in the paragraph below if project includes salvageable materials. Edit and delete salvageable items if none.

- E. Close openings in exterior surfaces to protect existing Work and salvage items from weather and extremes of temperature and humidity. Insulate ductwork and piping to prevent condensation in exposed areas.

3.3 INSTALLATION

- A. Coordinate Work of alterations and renovations to expedite completion, and if required sequence Work to accommodate Owner occupancy.

NOTE: Subparagraphs may need to reference Section 01045 “Cutting and Patching”.

- B. Remove, cut and patch Work in a manner to minimize damage and to provide restoring Products and finishes to original and or specified condition in accordance with Section 01045 "Cutting and Patching".
- C. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with neat transition to adjacent finishes in accordance with Section 01045 "Cutting and Patching".

NOTE: Edit the following paragraph and delete inapplicable examples. Closely coordinate with drawings and with individual product specification sections.

- D. In addition to specified replacement of equipment and fixtures, restore existing plumbing, heating, ventilation, air conditioning, electrical, systems to full operational condition.
- E. Recover and refinish Work that exposes mechanical and electrical Work exposed accidentally during the Work.
- F. Install Products as specified in individual sections.

3.4 TRANSITIONS

- A. Where new Work abuts or aligns with existing, perform a smooth and even transition. Patch work to match existing adjacent Work in texture and appearance.
- B. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect/Engineer.

3.5 ADJUSTMENTS

- A. Where removal of partitions or walls result in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.

NOTE: Edit the following paragraph and insert appropriate dimensions as applicable to project. Closely coordinate with drawings and with individual product specification sections. Standard is indicated- if closer tolerance is required- modify the standard.

- B. Where a change of plane of ¼ inch in (12) inches or more occurs, request recommendation from Architect/Engineer for providing a smooth transition.
- C. Trim existing doors as necessary to clear new floor finish. Refinish trim as required.
- D. Fit Work at penetrations of surfaces as specified in Section 01045 "Cutting and Patching".

3.6 REPAIR OF DAMAGED SURFACES

- A. Patch or replace portions of existing surfaces that are damaged, lifted, discolored, or showing imperfections.
- B. Repair substrate prior to patching finishes.

3.7 FINISHES

- A. Finish surfaces as specified in individual Product sections.
- B. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.8 CLEANING

NOTE: Subparagraph needs to reference "Cleaning" in Section 01500 "Construction Facilities and temporary Controls".

- A. In addition cleaning specified in Division 1 Section 01500 "Construction Facilities and Temporary Controls", clean Agency occupied areas of Work

END OF SECTION 01120

NOTE: This Section 01200 "Project Meetings" specifies administrative and procedural requirements for project meetings, including but not limited to, the following: Pre-construction conferences, Pre-installation conferences, and Progress meetings. Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for project meetings, including, but not limited to, the following:

NOTE: Edit and add or delete meetings and conferences types that are not required from the example list below.

1. *Start Date meeting (establishes start date)*
2. *Pre-construction conferences.*
3. *Pre-installation conferences.*
4. *Progress meetings.*
5. *Safety*
6. *Coordination*
7. *And as required*

NOTE: If other meetings, such as project closeout conferences, are required, insert meeting titles here and add requirements to the end of the section.

- B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section 01040 "Coordination" for procedures for coordinating project meetings with other construction activities.

NOTE: Revise the subparagraph below if requirements governing construction-schedule submittal are specified in special supplemental section "schedules and reports."

2. Division 1 Section 01300 "Submittals" for submitting the Construction Schedule or CPM Schedule..

NOTE: Select either Construction Schedule or CPM Schedule as appropriate for project and delete the other

3. Division 1 Section 01310 "Construction Schedule " for the Construction Schedule requirements

OR

3. Division 1 Section 01315 "CPM Construction Schedule " for the CPM Construction Schedule requirements.

NOTE: The subparagraph below refers to one building trade that frequently requires pre-installation conferences. Change the section name as necessary to suit project requirements. Add references to other sections that also require pre-installation conferences. **Delete subparagraph below if not applicable to project.**

4. Division 3 Section _____ "Architectural Pre-cast Concrete" for pre-installation/erection conferences.

NOTE: The subparagraph below refers to one building trade that frequently requires pre-construction conferences. Change the section name as necessary to suit project requirements. Add references to other sections that also require pre-construction conferences. **Delete subparagraph below if not applicable to project. Insert appropriate roofing section.**

5. Division 7 Section _____ "Thermal and Moisture Protection" for the pre-construction conferences.

1.3 PRE-CONSTRUCTION CONFERENCE

NOTE: Adjust the number of days in the next paragraph to suit project requirements.

- A. The Contractor will attend a pre-construction conference before starting construction, as scheduled by the Construction Administrator convenient to the Owner, the Construction Administrator, Architect, and Contractor. This meeting will take place at least (14) fourteen Working Calendar Days prior to official Start Date. Hold the conference at the Project Site or another convenient location as directed by the Construction Administrator. The Construction Administrator shall conduct the Pre-construction Conference to review the Contractor and Subcontractor responsibilities and personnel assignments.

NOTE: Amplify the paragraph below as necessary to suit project requirements.

- B. Attendees: Authorized representatives of the Construction Administrator, Owner, Architect, and their consultants; the Contractor and its superintendent; major subcontractors; agency; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.
- C. Agenda: Discuss items of significance that could affect progress, including the following:

NOTE: Add or delete items in example list below as necessary to suit project requirements.

1. *Tentative construction schedule.*
2. *Critical work sequencing.*
3. *Progress meeting schedule.*
4. *Designation of responsible personnel.*
5. *Procedures for processing field decisions and Change Orders.*
6. *Procedures for processing Applications for Payment.*
7. *Distribution of Contract Documents.*
8. *Submittal of Shop Drawings, Product Data, and Samples.*
9. *Preparation of record documents.*
10. *Use of the premises.*
11. *Parking availability.*

12. *Office, work, and storage areas.*
13. *Equipment deliveries and priorities.*
14. *Safety procedures.*
15. *First aid.*
16. *Security.*
17. *Housekeeping.*
18. *Working hours.*
19. *Coordination with Audio Visual and Telecommunications.*

1.4 PRE-INSTALLATION/CONSTRUCTION CONFERENCES

NOTE: Delete this article if the project does not need pre-installation/construction conferences. Limit pre-installation/construction conferences to major assemblies where the work requires tight control and coordination. If they are necessary, individual specification sections should specify pre-installation/construction conferences as a requirement, and reference this section.

- A. The Contractor will schedule a pre-installation conference(s) at the Project Site before each construction activity that requires coordination with other construction. The Contractor shall be responsible to notify in writing the Construction Administrator and the appropriate Subcontractor(s), etc., of the date and time of all Pre-installation/Construction Conferences. Notification shall be at least (7) seven Working Calendar Days, prior to the Conference. The Contractor shall be responsible for coordination and attendance of all Subcontractors, etc., involved in or affected by the installation for all "Pre-installation/Construction Conferences.
- B. Attendees: The Construction Administrator, Contractor, Subcontractors, Owner and Architect, the installer and representatives of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. The Contractor shall advise all attendees of the scheduled Pre-installation/Construction Conferences dates.
- B. Review the progress of other construction activities and preparations for the particular activity under consideration at each Pre-installation/Construction Conference, including but not limited to the following requirements:

NOTE: Add or delete items in example list below as necessary to suit project requirements.

1. *Contract Documents.*
2. *Options.*
3. *Related Change Orders.*
4. *Purchases.*
5. *Deliveries.*
6. *Shop Drawings, Product Data, and quality-control samples.*
7. *Review of mockups.*
8. *Possible conflicts.*
9. *Compatibility problems.*
10. *Time schedules.*
11. *Weather limitations.*

12. *Manufacturer's recommendations.*
13. *Warranty requirements.*
14. *Compatibility of materials.*
15. *Acceptability of substrates.*
16. *Temporary facilities.*
17. *Space and access limitations.*
18. *Governing regulations.*
19. *Safety.*
20. *Inspecting and testing requirements.*
21. *Required performance results.*
22. *Recording requirements.*
23. *Protection.*

- C. The Construction Administrator will record significant discussions and agreements and disagreements of each Pre-installation/Construction Conference, and the approved schedule. The Construction Administrator will promptly distribute the record of the Pre-installation/Construction Conference to all attendees.
- D. The Contractor shall not proceed with the installation/construction if the conference cannot be successfully concluded. The Contractor shall be responsible to initiate whatever actions are necessary to resolve impediments to performance of Work and schedule and reconvene another Pre-installation/Construction Conference at the earliest feasible date.

1.5 PROGRESS MEETINGS

NOTE: Modify the paragraph below if the project requires progress meetings on a monthly or weekly basis.

- A. The Construction Administrator will conduct progress meetings, bi-weekly, at the Project Site or at regular intervals as agreed upon at the Pre-construction Conference. The Construction Administrator will notify the Owner, the Architect, and the Contractor of the scheduled Progress Meeting dates. Coordinate dates of Progress Meetings with preparation of Application for Payment requests.

NOTE: Modify the paragraph below if attendance by other known entities is necessary.

- B. Attendees: In addition to representatives of the Contractor, Construction Administrator, Owner and the Architect, subcontractor, supplier, or other entity concerned with current progress or involved in planning, coordination, or performance of future activities may be requested to attend these meetings on an as needed basis. All participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Work. The Contractor shall include the site superintendent as a minimum.

NOTE: Revise the paragraph below to suit project requirements.

- C. Agenda: Progress Meetings shall review and correct or approve minutes of the previous Progress Meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the Project.
 1. Construction Schedule or CPM Schedule: Review progress since the last Progress Meeting. Determine where each activity is in relation to the required Contractor's "Construction Schedule" or "CPM Schedule" and whether each activity is on time or ahead or behind Schedule. Determine how Work that is behind Schedule will be expedited; secure commitments from

parties involved to do so. Discuss whether Schedule revisions are required to insure that current and subsequent activities will be completed within the Contract Time.

2. Review the present and future needs of each entity present, including the following:

NOTE: Add or delete items in example list below as necessary to suit project requirements.

- a. *Interface requirements.*
- b. *Time.*
- c. *Sequences.*
- d. *Status of submittals.*
- e. *Deliveries.*
- f. *Off-site fabrication problems.*
- g. *Access.*
- h. *Site utilization.*
- i. *Temporary facilities and services.*
- j. *Hours of work.*
- k. *Hazards and risks.*
- l. *Housekeeping.*
- m. *Quality and work standards.*
- n. *Change Orders.*
- o. *Documentation of information for payment requests.*

- D. Reporting: The Construction Administrator will distribute minutes of the meeting to each party present, promptly and before the next scheduled meeting, and to parties who should have been present.

1.6 SUBCONTRACTOR/COORDINATION/SAFETY MEETINGS

- A. The Contractor shall conduct Subcontractor/coordination meetings. The Contractor shall take meeting minutes. These minutes shall be made available upon request.. The Contractor shall notify the Construction Administrator of the times and dates of these meetings, who may elect to attend these meetings as an observer when necessary.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01200

NOTE: This Section 01300 "Submittals" includes administrative and procedural requirements for submittals required for performance of the Work. Submittals include the examples of the following types, contractor's construction schedule, submittal schedule, daily construction reports, shop drawings, product data, samples, quality assurance submittals, and proposed "equals" or "substitutions". Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submittals required for performance of the Work, including but not limited to the following:

NOTE: Delete items from the example list below that are not appropriate for the project. Add items to suit project requirements.

1. *Submittal schedule.*
2. *Shop Drawings.*
3. *Product Data.*
4. *Samples.*
5. *Quality assurance submittals.*
6. *Proposed "Substitutions/Equals".*
7. *Warrantee samples.*
8. *Coordination Drawings.*
9. *O & M Manuals*

- B. Administrative Submittals: Refer to other Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:

NOTE: Delete items from the example list below that are not appropriate for the project. Add items to suit project requirements.

1. *Permits.*

2. *Applications for Payment.*
3. *Performance and payment bonds.*
4. *Contractor's construction schedule.*
5. *Daily construction reports.*
6. *Construction Photographs.*
7. *Insurance certificates.*
8. *List of subcontractors.*
9. *Subcontractors/Suppliers FEIN #'s and Connecticut tax registration #.*

C. Related Sections: The following Sections contain requirements that relate to this Section:

NOTE: Delete Division Sections from the list below that are not appropriate for the project. Add Division Sections to suit project requirements.

1. Division 1 Section 01027 "Application for Payment" specifies requirements for submittal of the Schedule of Values.
2. Division 1 Section 01040 "Coordination" specifies requirements governing preparation and submittal of required Coordination Drawings.
3. Division 1 Section 01200 "Project Meetings" specifies requirements for submittal and distribution of meeting and conference minutes.

NOTE: Retain paragraph below that is the type of schedule used for the project. Delete the schedule that is not applicable.

4. Division 1 Section 01310 "Construction Schedules".

OR

4. Division 1 Section 01315 "CPM Schedule" specifies requirements for contractor's schedule submittal.
5. Division 1 Section 01380 "Construction Photographs" specifies requirements for submittal of periodic construction photographs.
6. Division 1 Section 01400 "Quality Control" specifies requirements for submittal of inspection and test reports.
7. Division 1 Section 01631 "Equals and Substitutions" specifies requirements for submittal of requests to use products other than those specified.
8. Division 1 Section 01700 "Contract Closeout" specifies requirements for submittal of Project Record Documents and warranties at project closeout.
9. Division 1 Section 01740 "Warranties and Bonds".

1.3 DEFINITIONS

- A. Coordination Drawings show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or to function as intended and as identified in the Specification Division 2 through 16.
 1. Preparation of Coordination Drawings is specified in Division 1 Section "Coordination" and may include components previously shown in detail on Shop Drawings or Product Data.
- B. Field samples are full-size physical examples erected on-site to illustrate finishes, coatings, or finish materials. Field samples are used to establish the standard by which the Work will be judged.

- C. Mockups are full-size assemblies for review of construction, coordination, testing, or operation; they are not Samples.

1.4 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
 - b. The Architect reserves the right to reject incomplete submitted packages.
 3. Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.

NOTE: Revise the time periods of subparagraphs below to suit project requirements.

- a. Allow (2) two weeks for initial review. Allow additional time if the Architect must delay processing to permit coordination with subsequent submittals.
- b. If an intermediate submittal is necessary, process the same as the initial submittal.
- c. Allow (2) two weeks for reprocessing each submittal.
- d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the Work to permit processing.

NOTE: Revise the submittal formats of subparagraphs below to suit project requirements.

- B. Submittal Preparation: Place a permanent label, title block or 8-1/2 inches x 11 inches cover page approved by the Architect, on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
1. The minimum number of copies required for each submittal shall be at a minimum 7 copies or as determine otherwise at the pre-construction conference or by the Construction Administrator.
 2. Provide a space approximately 4 inches by 5 inches on the label, beside the title block or on the cover page on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 3. Include the following information on the label for processing and recording action taken.

NOTE: Delete items from the example list below that are not appropriate for the project. Add items to suit project requirements.

- a. *Project Name and State of Connecticut Project Number.*
- b. *Date.*
- c. *Name and address of the Architect, Construction Administrator, and Owner Representative.*
- d. *Name and address of the Contractor.*
- e. *Name and address of the subcontractor.*
- f. *Name and address of the supplier.*

- g. Name of the manufacturer.*
- h. Number and title of appropriate Specification Section.*
- i. Drawing number and detail references, as appropriate.*
- j. Indicate either initial or resubmittal.*
- k. Indicate deviations from Contract Documents.*
- l. Indicate if "equal" or "substitution".*

NOTE: Revise the submittal process with copy of the transmittal to Construction Administrator and original to Architect as required.

- C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Architect using a transmittal form. Copy the Construction Administrator on the transmittal. The Architect will return all submittals to the Contractor after action is taken with a complete copy of the submittal package and one complete copy of the submittal package. The Architect will not accept submittals received from sources other than the Contractor.
- 1. On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

1.6 SUBMITTAL SCHEDULE

NOTE: Revise the time periods of subparagraph below to suit project requirements.

- A. After development and review by the Owner and Architect acceptance of the Contractor's Construction or CPM schedule prepare a complete schedule of submittals. Submit the schedule to the Construction Administrator within 30 days of Contract Award.
- 1. Coordinate Submittal Schedule with the list of subcontracts, Schedule of Values, and the list of products as well as the contractor's Construction or CPM Schedule.
 - 2. Prepare the schedule in chronological order. Provide the following information:
 - a. Schedule date for the initial submittal.
 - b. Related section number.
 - c. Submittal category (Shop Drawings, Product Data, or Samples).
 - d. Name of Subcontractor.
 - e. Description of the part of Work covered.
 - f. Scheduled date for resubmittal.
 - g. Scheduled date for the Architect's final release of approval.
- B. Distribution: Following response to the initial submittal, print and distribute copies to the Construction Administrator, Architect, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.
- 1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.
- C. Schedule Updating: Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.7 DAILY CONSTRUCTION REPORTS

- A. Prepare a daily construction report recording the following information concerning events at the site, and submit duplicate copies to the Construction Administrator at weekly intervals:

NOTE: Delete items from the example list below that are not appropriate for the project. Add items to suit project requirements.

1. *List of subcontractors at the site.*
2. *Approximate count of personnel at the site.*
3. *High and low temperatures, general weather conditions.*
4. *Accidents and unusual events.*
5. *Meetings and significant decisions.*
6. *Stoppages, delays, shortages, and losses.*
7. *Meter readings and similar recordings.*
8. *List of equipment on site and identify if idle or in use.*
9. *Orders and requests of governing authorities.*
10. *Change Orders received, start and end dates.*
11. *Services connected, disconnected.*
12. *Equipment or system tests and startups.*
13. *Partial Completion's, occupancies.*
14. *Substantial Completion's authorized.*
15. *Equals or Substitutions approved or rejected.*

1.8 SHOP DRAWINGS

NOTE: Revise the submittal formats of subparagraphs below to suit project requirements.

- A. Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.
- B. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:
1. Dimensions.
 2. Identification of products and materials included by sheet and detail number.
 3. Compliance with specified standards.
 4. Notation of coordination requirements.
 5. Notation of dimensions established by field measurement.
 6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 36 by 48 inches.
 7. Submit one (1) reproducible media and seven (7) prints as directed by the Construction Administrator. The Contractor's submittal shall identify the specification section and/or drawing number applicable to the submittal.
 8. Details shall be large scale and/or full size.

- C. The Contractor shall review the Shop Drawings, stamp with this approval, and submit them with reasonable promptness and in orderly sequence so as to cause no delay in his Work or in the Work of any subcontractor. Shop Drawings shall be properly identified as specified for item, material, workmanship, and project number. At the submission, the Contractor shall inform the Architect, in writing of any deviation in the shop drawings from the requirements of the Contract Documents.
- D. The Architect will review and comment on shop drawings with reasonable promptness so as to cause no delay, but only for conformance with the design concept of the project and with the information given in the Contract Documents. Refer to Article 5 of General Conditions. Shop Drawings received by the Architect that indicate insufficient study of drawings and specifications, illegible portions or gross errors, will be rejected outright. Such rejections shall not constitute an acceptable reason for granting the Contractor additional time to perform the work.
- E. The Contractor shall make any corrections required by the Architect and shall resubmit the required number of corrected copies of shop drawings until fully reviewed.
- F. Upon final review submit four (4) additional prints, same as submitted, to the Construction Administrator for his use.
- G. The Architect's review and comments on shop drawings shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents.
- H. Only final reviewed shop drawings are to be used on the project site.
- I. The Work installed shall be reviewed in accordance with the shop drawings and the drawings and specifications. Final Review of the shop drawings by the Architect shall constitute acceptance by the State and the Architect of a variation or departure that is clearly identified. Final reviewed shop drawings shall not replace or be used as a vehicle to issue or incorporate change orders.

1.9 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, schedules, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.
 - 1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:

Revise the submittal formats of subparagraphs below to suit project requirements.

- a. *Manufacturer's printed recommendations.*
 - b. *Compliance with trade association standards.*
 - c. *Compliance with recognized testing agency standards.*
 - d. *Application of testing agency labels and seals.*
 - e. *Notation of dimensions verified by field measurement.*
 - f. *Notation of coordination requirements.*
 - 2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
 - 3. Preliminary Submittal: Submit a preliminary single copy of Product Data where selection of options is required.

4. Submittals: Submit 7 copies of each required submittal; submit 5 copies where required for maintenance manuals. The Architect will retain one and will return the other marked with action taken and corrections or modifications required.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
5. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
 - a. Do not proceed with installation until a copy of Product Data is in the Installer's possession.
 - b. Do not permit use of unmarked copies of Product Data in connection with construction.

NOTE: Projects requiring sample full-scale mock-ups, the Architect shall identify below and with technical specifications.

1.10 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
 1. Store, mount or display Samples on site in the manner to facilitate review of qualities indicated. Prepare Samples to match the Architect's sample. Include the following:
 - a. *Specification Section number and reference.*
 - b. *Generic description of the Sample.*
 - c. *Sample source.*
 - d. *Product name or name of the manufacturer.*
 - e. *Compliance with recognized standards.*
 - f. *Availability and delivery time.*
 2. Submit Samples for review of size, kind, color, pattern, and texture. Submit Samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
 - a. Where variation in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least (3) three multiple units that show approximate limits of the variations.
 - b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
 - c. Refer to other Sections for Samples to be returned to the Contractor for incorporation in the Work. Such Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.
 - d. Samples not incorporated into the Work, or otherwise designated as the Owner's property, are the property of the Contractor and shall be removed from the site prior to Substantial Completion.

3. Preliminary Submittals: Submit a full set of choices where Samples are submitted for selection of color, pattern, texture, or similar characteristics from a range of standard choices, unless otherwise noted in specification section..
 - a. The Architect will review and return preliminary submittals with the Architects notation, indicating selection and other action.
 4. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation, and similar characteristics, submit (3) sets. The Architect will return one set marked with the action taken.
 5. Maintain sets of Samples, as returned, at the Project Site, for quality comparisons throughout the course of construction.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 - b. Sample sets may be used to obtain final acceptance of the construction associated with each set.
- B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.
1. Field samples are full-size examples erected on-site to illustrate finishes, coatings, or finish materials and to establish the Project standard.
 - a. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

1.11 QUALITY ASSURANCE SUBMITTALS

- A. Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.
- B. Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.
1. Signature: Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.
- C. Inspection and Test Reports: Requirements for submittal of inspection and test reports from independent testing agencies are specified in Division 1 Section "Quality Control."

NOTE: Architect to edit the action language to meet the intent of the language examples listed.

1.12 ARCHITECT'S ACTION

- A. Except for submittals for the record or information, where action and return is required, the Architect will review each submittal, mark to indicate action taken, and return promptly.
1. Compliance with specified characteristics is the Contractor's responsibility.
- B. Action Stamp: The Architect will stamp each submittal with a uniform, action stamp. The Architect will mark the stamp appropriately to indicate the action taken, as follows:

1. Final Unrestricted Release: When the Architect marks a submittal "Approved for fabrication," the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.
 2. Final-But-Restricted Release: When the Architect marks a submittal "Incorporate Notations," the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Submit corrected copies for record. Final payment depends on that compliance.
 3. Returned for Resubmittal: When the Architect marks a submittal "Rejected, or Revise and Resubmit," do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat if necessary to obtain different action mark.
 - a. Do not use, or allow others to use, submittals marked "Rejected, or Revise and Resubmit" at the Project Site or elsewhere where Work is in progress.
 4. Other Action: Where a submittal is for information or record purposes or special processing or other activity, the Architect will return the submittal marked "Action Not Required."
- C. Unsolicited Submittals: The Architect will discard unsolicited submittals without action.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01300

NOTE: This Section 01310 "Construction Schedules" includes requirements administrative and procedural requirements for preparation, submittal, and updating of the Contractor's construction schedules and reporting progress of the Work. It is appropriate for small single contract work. Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply. **USE THIS SECTION WHEN THE PROJECT TO BE ADMINISTRATED HAS A CONSTRUCTION COST ESTIMATE UNDER \$5,000,000.** Use Section 01315 "CPM Schedules" when the project to be administrated has a construction cost estimate over \$5,000,000". The Project Manager must decide if it is appropriate to use Section 01315 "CPM Schedules" for a specific project under \$5,000,000.

The **header and footer** for each page of the Project Manual shall match the format, font (Times New Roman), size (11 pt), font style (**BOLD & CAPITALIZED**) and line borders, of the header and footer shown herein. The **header** of each page shall contain the Section Number, the Section Title, and the page number & number of pages as shown herein. The **footer** shall contain the project number in the right hand side as shown herein, including the Table of Contents. Division 0 and 1 contain a revision date in the left side of the footer This date is to remain as it is for Department informational purposes only and should not be altered by the Architect/Engineer.

DO NOT include Paragraphs or parts of Paragraphs in the project manual, which have no applicability to the specific project. **KEEP IN NUMERICAL SEQUENCE. IF A PART IS NOT USED OR ELIMINATED THEN RENUMBER THE FOLLOWING SECTIONS. IF A PART IS NOT APPLICABLE TO A SPECIFIC PROJECT THEN DESIGNATE IT AS (NOT APPLICABLE).** Also, please review the General Conditions carefully and coordinate the requirements of those Articles including the Definitions.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the preparation, submittal, and updating of the Contractor's construction schedules and reporting progress of the Work. It is appropriate for small single contract work.
 - 1. Refer to the General Conditions and the Agreement for definitions and specific dates of Contract Time.
- B. This Section includes the following:
 - 1. Format.
 - 2. Content.
 - 3. Revisions to schedules.
 - 4. Submittals.
 - 5. Distribution.
- C. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section 01027 "Application for Payments" specifies requirements for submitting Schedule of Values and Application for Payments.
 - 2. Division 1 Section 01200 "Project Meetings" specifies requirements for submitting and distributing meeting and conference minutes.

3. Division 1 Section 01300 "Submittals" specifies requirements for submitting the the Submittal Schedule.

NOTE: Select either Section 01310 "Construction Schedule" or Section 01315 "CPM Schedule" as appropriate for project and delete the other Section.

4. Division 1 Section 01400 "Quality Control" specifies requirements for submitting inspection and test reports.
5. Division 1 Section 01600 "Materials and Equipment" specifies requirements for submitting the list of products.

1.3 DEFINITIONS

- A. Construction Schedule: A method of planning and scheduling a construction project utilizing a horizontal bar chart with a separate bar for each major portion of the Work or operation to make the schedule an effective tool for planning and monitoring the progress of the work.

1.4 QUALITY ASSURANCE:

NOTE: Retain paragraph below where the Work will be conducted under a single prime contract. Delete for multiple prime contracts. Revise if the owner wants to retain an independent consultant.

- A. The Contractor's Consultant: Retain a consultant to provide planning, evaluating, and reporting by CPM scheduling.

NOTE: Delete subparagraph below if bidders are not qualified construction scheduling operators or would not be acceptable as operators if qualified. Delete if the Owner Representative wants contractor to retain an independent consultant. Review these options with the Owner Representative. Independent consultants should be impartial in the case of separate prime contractors or if small uncomplicated project.

1. In-House Option: The Owner may waive the requirement to retain a consultant if the Contractor can demonstrate that:
 - a. The Contractor has the computer equipment required to produce construction schedules.
 - b. The Contractor employs skilled personnel with experience in construction scheduling and reporting techniques.

NOTE: Insert a specific computer program and hardware configuration if the Microsoft Project program is unacceptable.

2. Program: Use "Microsoft Project", latest version.

NOTE: Manual referenced in subparagraph below contains basic recommendations for construction scheduling procedures and methods.

3. Standards: Comply with procedures contained in AGC's "Construction Planning & Scheduling."

1.5 PRELIMINARY SCHEDULE

- A. Preliminary gantt schedule is to be prepared by the General Contractor and submitted to the Construction Administrator within seven days of award of contract. This schedule is to cover all items of Work from the start of the project up to the completion of the project. This schedule must be revised when the actual schedule of significant items varies more than one week from the proposed schedule.

1.6 CONSTRUCTION SCHEDULE FORMAT

NOTE: Retain paragraph below where the work will be conducted under a single prime contract. Delete for multiple prime contracts. Revise if the owner wants to retain an independent consultant.

1. Format: Utilize a horizontal bar chart (ganttt) with a separate bar for each major portion of the Work or operation, identifying first work day of each week.

NOTE: Insert a specific computer program and hardware configuration of and resource loaded **Microsoft Project**, latest version of the program.

2. Program: Use **Microsoft Project**, latest version.

NOTE: Edit Sequence of listings in paragraph below as required for project.

3. Sequence of Listings: Utilize the Table of Contents of this Project Manual and the chronological order of the start of each item of work.

4. Scale and Spacing: Provide space for notations and revisions.

NOTE: Edit sheet size in paragraph below as required for project.

5. Sheet Size: To be coordinated with Construction Administrator.

1.7 CONTENT

NOTE: Edit and revise paragraphs below to suit project.

- A. Show complete sequence of construction by activity, with dates beginning and completion of each element of construction.
- B. Identify each item by specification section numbers.
- C. Identify work of separate phases other and other logically grouped activities.
- D. Show accumulated percentages of completion of each item, and total percentage of Work completed, as of the first day of each month.
- E. Provide separate schedule of submittal dates for shop drawings, product data, and samples, Owner/Agency furnished products and any products identified as under Allowances, and dates reviewed submittals will be required from Architect/Engineer. Indicate decision dates for selection of finishes.
- F. Indicate delivery dates for Owner/Agency furnished products and any products identified as under Allowances.
- G. Indicate critical path with original baseline indicated.
- H. Coordinate content with Schedule of Values specified in Section 01027 "Application for Payments".

1.8 SUBMITTALS AND REVISIONS TO SCHEDULES

- A. An initial bar graph schedule is to be prepared by the General Contractor and submitted to the CA Refer to item 1.5.
- B. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
- C. Identify activities modified since previous submittal, major changes in scope, other identifiable changes.
- D. Provide narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect.

NOTE: Projects requiring a Construction Schedule should begin with a preliminary bar-chart (ganttt) schedule of the type described below. Revise times given in paragraph below to suit project.

- E. Schedules must be revised monthly and when the actual schedule of significant items varies more than (7) calendar days from the proposed schedule.
- F. Submit revised Construction Schedules for each Application for Payment.

G. Submit (4) four copies of the Construction Schedule to the Construction Administrator.

1.9 DISTRIBUTION

- A. Distribute copies of the Construction Schedules to Construction Administrator, Architect, Owner, Subcontractors, suppliers, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problem anticipated by projections indicated in schedules.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01310

NOTE: This Section 01315 "CPM Schedules" includes requirements includes administrative and procedural requirements for the critical path method (CPM) of scheduling and reporting progress of the Work. It is appropriate for complex single contract Work. **USE THIS SECTION WHEN THE PROJECT TO BE ADMINISTRATED HAS A CONSTRUCTION COST ESTIMATE OVER \$5,000,000.** Use Section 01310 "Construction Schedules" when the project to be administrated has a construction cost estimate under \$5,000,000". The Project Manager must decide if it is appropriate to use Section 01300 "Construction Schedules" for a specific project over \$5,000,000.

The **header and footer** for each page of the Project Manual shall match the format, font (Times New Roman), size (11 pt), font style (**BOLD & CAPITALIZED**) and line borders, of the header and footer shown herein. The **header** of each page shall contain the Section Number, the Section Title, and the page number & number of pages as shown herein. The **footer** shall contain the project number in the right hand side as shown herein, including the Table of Contents. Division 0 and 1 contain a revision date in the left side of the footer This date is to remain as it is for Department informational purposes only and should not be altered by the Architect/Engineer.

DO NOT include Paragraphs or parts of Paragraphs in the project manual, which have no applicability to the specific project. **KEEP IN NUMERICAL SEQUENCE, IF A PART IS NOT USED OR ELIMINATED THEN RENUMBER THE FOLLOWING SECTIONS. IF A PART IS NOT APPLICABLE TO A SPECIFIC PROJECT THEN DESIGNATE IT AS (NOT APPLICABLE).** Also, please review the General Conditions carefully and coordinate the requirements of those Articles including the Definitions.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the critical path method (CPM) of scheduling and reporting progress of the Work.
 - 1. Refer to the General Conditions and the Agreement for definitions and specific dates of Contract Time.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section 01200 "Project Meetings" specifies requirements for submitting and distributing meeting and conference minutes.
 - 2. Division 1 Section 01300 "Submittals" specifies requirements for submitting the preliminary Construction Schedule and the monthly CPM Construction Schedules.

NOTE: Select either complete Section 01310 "Construction Schedule" or 01315 CPM Schedule" as appropriate for the project, and delete the other Section.

- 3. Division 1 Section 01400 "Quality Control" specifies requirements for submitting inspection and test reports.
- 4. Division 1 Section 01600 "Materials and Equipment" specifies requirements for submitting the list of products.

NOTE: Definitions below have been adapted from the glossary of terms in AGC's "Construction Planning & Scheduling." Delete definitions as necessary for specific project.

1.3 DEFINITIONS

- A. Critical Path Method (CPM): A method of planning and scheduling a construction project where activities are arranged based on activity relationships and network calculations determine when activities can be performed and the critical path of the Project.
- B. Critical Path: The longest continuous chain of activities through the network schedule that establishes the minimum overall project duration.
- C. Network Diagram: A graphic diagram of a network schedule, showing the activities and activity relationships.
- D. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical activities are activities on the critical path.
 - 2. Predecessor activity is an activity that must be completed before a given activity can be started.
- E. Event: An event is the starting or ending point of an activity.
- F. Milestone: A key or critical point in time for reference or measurement.

NOTE: Retain definitions below for most projects. Designating ownership of float time can save arguments later.

- G. Float is the measure of leeway in activity performance. Accumulative float time belongs to the Owner.
 - 1. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the following activity.
 - 2. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned project completion date.

1.4 QUALITY ASSURANCE

NOTE: Retain paragraph below where the Work will be conducted under a single prime contract. Delete for multiple prime contracts. Revise if the owner wants to retain an independent consultant.

- A. The Contractor's Consultant: Retain a consultant to provide planning, evaluating, and reporting by CPM scheduling.

NOTE: Delete subparagraph below if bidders are not qualified CPM operators or would not be acceptable as operators if qualified. Delete if the Owner Representative wants contractor to retain an independent consultant. Review these options with the Owner Representative. Independent consultants should be impartial in the case of separate prime contractors or if small uncomplicated project.

- 1. In-House Option: The Owner may waive the requirement to retain a consultant if the Contractor can demonstrate that:
 - a. The Contractor has the computer equipment required to produce CPM network diagrams.
 - b. The Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques.

NOTE: Insert a specific computer program and hardware configuration if the Primavera Project Planner program is unacceptable.

- 2. Program: Use "Microsoft Project", latest version.

NOTE: Manual referenced in subparagraph below contains basic recommendations for CPM procedures and methods.

- 3. Standards: Comply with procedures contained in AGC's "Construction Planning & Scheduling."

1.5 PRELIMINARY SCHEDULE

NOTE: Projects using CPM techniques should begin with a preliminary bar-chart schedule of the type described below. Revise times given in paragraph below to suit project.

- A. A preliminary bar graph schedule is to be prepared by the General Contractor and submitted to the Construction Administrator within (7) seven Working Calendar Days of award of contract. This schedule is to cover all items of Work from the start of the project up to the start of the concrete foundations. This schedule must be revised when the actual schedule of significant items varies more than (7) seven Calendar Days from the proposed schedule. The critical path with baseline must be indicated.

1.6 CPM SCHEDULE FORMAT

NOTE: Revise paragraph below to suit project.

- A. Prepare the Contractor's Construction Schedule using the network analysis diagram system known as the critical path method (CPM). Follow procedures outlined herein.
1. Proceed with preparation of the network diagram immediately following notification of Contract award.

NOTE: Revise the 60-day period below to suit project.

2. Follow the steps necessary to complete development of the network diagram in sufficient time to submit the CPM Schedule so it can be accepted for use no later than (60) sixty Calendar Days after commencement of the Work.
- B. Network Details:
1. The Detailed Network Diagram shall be constructed to show the order in which the Contractor proposed to carry out the Work. The Contractor shall use the detailed network Diagram in planning, scheduling, coordinating and performing the Work under this Contract (including all activities of subcontractors, equipment vendors and suppliers). The following criteria shall form the basis for the logic.
 - a) What must be completed before an activity can be started?
 - b) What can be done concurrently?
 - c) What must be started immediately following an activity.
 2. The detailed Network Diagram shall provide sufficient detail and clarity of form and technique so that the Contractor can plan, schedule and control his Work and the Owner can readily monitor and follow the progress for all portions of Work. The Detailed network Diagram shall comply with the limits imposed by the scope of Work and by contractually specified intermediate milestone, critical path and completion dates. The degree of detail of the Network Diagram shall be to the satisfaction of the Construction Administrator and Owner but at a minimum the following factors must be included:
 - a) The structural breakdown of the project.
 - b) The type of Work to be performed.
 - c) The purchase, manufacture and delivery activities for all major materials and equipment.
 - d) Deliveries of Owner-furnished equipment.
 - e) Submittal and approval of shop drawings and material samples.
 - f) The Critical Path.
 - g) Plans for all subcontract Work.

- h) Assignment of responsibility for performing all activities.
 - i) Identification of interfaces and dependencies with preceding, concurrent and follow-on contractors;
 - j) Approval of test results
 - k) Planning for phased or total takeover by Owner;
3. The activities outlined in the Detailed Network Diagram shall be analyzed in detail for normal operations, manpower and equipment to determine activity time duration's in units of whole calendar days. Activity duration over (21) twenty-one Calendar Days shall be kept to a minimum except in the case of non-construction activities such as procurement of materials, delivery of equipment and concrete curing. All duration's shall be the result of definitive manpower and resource planning under contractually defined on-site work conditions by the Contractor.
- C. Summary Master Network:
1. The Contractor shall also prepare and submit a time-scaled Summary Master Network on a single sheet showing the total project in approximately (50) fifty to (100) one hundred activities. This Schedule shall accurately summarize the Detailed Network Diagram that is to be computerized. Emphasis shall be placed on major milestones, critical path and contractual interference with others.
- D. Updates:
1. The initial update shall take place the first week after a finalized schedule is submitted by the Contractor. Subsequent updates shall be done monthly for the duration of the contract. Each updating is to include an Activity Details Listing (ADL), Detailed Network Diagram (DND) and a Summary Master Network (SMN). The updating shall indicate:
- a) Actual activity percent complete listings.
 - b) Actual percent complete and projected activity percent complete from Baseline Schedule.
 - c) Revised logic and changes in activity duration.
 - d) Critical Path with original baseline indicated.
 - e) Projected future start and completion dates.
 - f) Delays affecting project completion.
 - g) A bar chart covering the next two months of Work.
2. Four copies of each report, diagram graph, etc. and one floppy disk of the updated CPM are to be submitted with each updating.
3. As part of the monthly update the Construction Administrator will produce a Narrative Progress Report describing the physical progress during the report period, potential delays and problems, estimated impact on performance to each Contractor and overall project completion date.
4. If the Contractor fails to have the required submittals, material, and manpower on the project to keep up with this schedule, the Owner may withhold approval of the progress payment estimates until the situation is corrected to the satisfaction of the Owner and the Construction Administrator.
- E. Delays:
1. To assess the impact of any delay(s) on the project, the Contractor must use the project CPM Schedule to demonstrate how the delay(s) affects the project critical path and its net impact on

the completion date. The Contractor must use the most current CPM Schedule in establishing delays to project completion.

2. Should the progress of the Work be delayed for any reason other than those mentioned in the General Conditions under Article 4, "Commencement and Completion of Work," and if such delays, being the fault of the Contractor and resulting in the Contractor being unable to comply with the scheduled completion date, the Contractor agrees to take all necessary action, including additional overtime at the Contractor's expense, to ensure that the Contract completion dates are met.

1.9 DISTRIBUTION

- A. Distribute copies of the CPM Construction Schedules to Construction Administrator, Architect, Owner, Subcontractors, suppliers, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problem anticipated by projections indicated in schedules.

NOTE: Insert other special actions required in CPM scheduling procedures.
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PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01315

NOTE: This Section 01380 "Construction Photographs" requirements include administrative and procedural requirements for construction photographs of the Work. This section does not apply to all projects; determine need with Project Manager including number of photos.

The **header and footer** for each page of the Project Manual shall match the format, font (Times New Roman), size (11 pt), font style (**BOLD & CAPITALIZED**) and line borders, of the header and footer shown herein. The **header** of each page shall contain the Section Number, the Section Title, and the page number & number of pages as shown herein. The **footer** shall contain the project number in the right hand side as shown herein, including the Table of Contents. Division 0 and 1 contain a revision date in the left side of the footer This date is to remain as it is for Department informational purposes only and should not be altered by the Architect/Engineer.

DO NOT include Paragraphs or parts of Paragraphs in the project manual, which have no applicability to the specific project. KEEP IN NUMERICAL SEQUENCE. IF A PART IS NOT USED OR ELIMINATED THEN RENUMBER THE FOLLOWING SECTIONS. IF A PART IS NOT APPLICABLE TO A SPECIFIC PROJECT THEN DESIGNATE IT AS (NOT APPLICABLE). Also, please review the General Conditions carefully and coordinate the requirements of those Articles including the Definitions.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for construction photographs.

NOTE: This Section does not apply to all projects; determine need with Project Manager including number of photos.

- B. Related Sections: The following Section contains requirements that relate to construction photographs:

- 1. Division 1 Section 01300 "Submittals" specifies general requirements for submitting digital construction photographs.

1.3 SUBMITTALS

NOTE: Revise paragraph below to satisfy office policy and project requirements. Change number of photos required complying with distribution requirements.

- A. Photographs: Provide a digital camera to take 24 or more photos each time. Deliver two sets of photo files on CD-ROM and one set of prints to the Construction Administrator for the Department.

NOTE: If other entities (i.e., Agency) require prints, change number of prints required in paragraph above and insert distribution requirements here.

- B. Extra Sets: When requested by the Owner, the photographer shall prepare extra sets of prints or CD-ROMs. The photographer shall distribute these directly to the designated parties who will pay the costs for the extra sets directly to the photographer.

NOTE: Retain paragraph below when paragraph above is against local custom. Revise to suit project.

1.4 QUALITY ASSURANCE

NOTE: Retain only 1 of 2 paragraphs below or delete both and assign responsibility to the architect or Construction Administrator. Retain paragraph below when the contractor obtains services of the photographer.

A. Engage a qualified commercial photographer to take photographs during construction.

NOTE: Paragraph below establishes minimum qualifications for the photographer. Delete if project circumstances will not permit establishing an experience limitation similar to that indicated.

B. Photographer's Qualifications: Photographer shall be an individual of established reputation who has been regularly engaged as a professional photographer for not less than 3 years.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC COPIES

NOTE: Paragraph below includes requirements for photographic slides that are normally considered standard. Revise if the project requires other special photographic services.

A. On the date the work is begun and every 30 days thereafter (until the work is at least 95 percent complete), the Contractor shall have digital photographs of the construction taken by a professional photographer.

NOTE: Edit paragraph below for number of slides needed for project requirements if necessary.

B. Identification: Label each CD-ROM with project name and date the photographs were taken. With each submittal provide an applied label, rubber-stamped or index sheet with the following information:

NOTE: Insert additional requirements if necessary.

1. Name of the Project.
2. Name and address of the photographer.
3. Name of the Architect.
4. Name of the Contractor.
5. Date the photographs were taken.
6. Vantage Point: Description of vantage point, in terms of location, direction (by compass point), and elevation or story of construction.

PART 3 - EXECUTION

NOTE: Specifiers may further develop Part 3 to specify other procedures such as lighting levels, the absence or presence of people, and other requirements.

3.1 PRECONSTRUCTION PHOTOGRAPHS

NOTE: Delete this article if the project does not require photographs that show preexisting conditions.

A. Before starting construction, take digital photos of the site and surrounding properties from different points of view, as selected by the Construction Administrator.

NOTE: If the contract sum includes costs for pre-construction photographs, indicate number required in subparagraphs below if number can be determined.

1. Take digital photos in sufficient number to show existing site conditions before starting Work.
2. Take digital photos of adjacent existing buildings either on or adjoining the property in sufficient detail to record accurately the physical conditions at the start of construction.

3.2 PHOTOGRAPHIC REQUIREMENTS

NOTE: Requirements in paragraph below are minimal but adequate for many projects.. Revise number of photographs required to suit project.

- A. Take (24) or more digital photographs monthly, coinciding with the cutoff date associated with each Application for Payment. The Construction Administrator shall select the vantage points for each shot to best show the status of construction and progress since the last photos were taken.
- B. As the digital photographs are a record of the work progress, they shall be taken each month, whether or not they show work done during the preceding month. Deliver the CD-ROMs and prints within 10 days of their taking.
- C. Provide and coordinate the use of photographic software to assure that the photos are viewable by all interested parties.

END OF SECTION 01380

NOTE: This Section 01400 "Quality Control" includes requirements for quality assurance and inspecting and testing laboratory services. It is appropriate for complex single contract work. Edit paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality-control services.
- B. Quality-Control services include fire alarm acceptance testing, inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by the Owner.
- C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.
- D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.
 - 1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified inspections, tests, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- E. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section 01045 "Cutting and Patching" specifies requirements for repair and restoration of construction disturbed by inspection and testing activities.
 - 2. Division 1 Section 01300 "Submittals" specifies requirements for development of a schedule of required tests and inspections.

3. Division 1 Section 01700 "Contract Closeout", specific requirements for contract closeout procedures.
4. Division 16 "Fire Alarm System" specifies the Alarm System.

1.3 RESPONSIBILITIES

- A. Contractor Responsibilities: Unless otherwise indicated as the responsibility of another identified entity, the Owner, through the Construction Administrator, shall provide inspections, tests, and other quality-control services specified elsewhere in the Contract Documents and required by authorities having jurisdiction. All tests required by the individual specification sections are required to be scheduled and notification given to the Construction Administrator 24/48 hours in advance to the test/inspection as applicable. Costs for these services are not included in the Contract Sum.
 1. Where individual Sections specifically indicate that certain inspections, tests, and other quality-control services are the Contractor's responsibility, the Contractor shall employ and pay a qualified independent testing agency to perform quality-control services. Costs for these services are included in the Contract Sum.
 2. Where individual Sections specifically indicate that certain inspections, tests, and other quality-control services are the Owner's responsibility, the Owner will employ and pay a qualified independent testing agency to perform those services.
 - a). Such services include Special Inspections as required by the latest adoption of the "Connecticut State building Code".
 - b) Where the Owner has engaged a testing agency for testing and inspecting part of the Work, and the Contractor is also required to engage an entity for the same or related element, the Contractor shall not employ the entity engaged by the Owner. The Owner will engage the services of a qualified Special Inspector for this project. The Special Inspector, as a representative of the Owner, shall document and confirm compliance with the provisions of the Connecticut State Building Code for Special Inspections.
 - c) Materials and assemblers for this project will be tested and construction operations inspected as the work progresses. Failure to detect any defective work or material shall not in any way prevent later rejection when such defect is discovered nor shall it obligate the State for final acceptance.
 - d) The Owner use of testing and inspection services shall in no way relieve the contractor of the responsibility to furnish materials and finished construction in full compliance with the Contract Documents and the Connecticut State Building Codes.
- B. Retesting: The Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether the original test was Contractor's responsibility.
 1. The cost of retesting construction, revised or replaced by the Contractor, is the Contractor's responsibility where required tests performed on original construction indicated noncompliance with Contract Document requirements.
 2. The Owner will issue a credit change order to cover all costs incurred related to all re-tests/re-inspection due to non-compliance to the contract documents, including but not limited to the Owners costs and the Consultants costs.
- C. Associated Services: Cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested. Notify the agency sufficiently in

advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:

1. Provide access to the Work.
2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.
3. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
4. Provide facilities for storage and curing of test samples.
5. Deliver samples to testing laboratories.
6. Provide an approved design mix proposed for use for material mixes that require control by the testing agency.
7. Provide security and protection of samples and test equipment at the Project Site.

NOTE: Retain the following paragraph on duties of the testing agency when contractor employs the agency.

D. Duties of the Testing Agency: The independent testing agency engaged to perform inspections, sampling, and testing of materials and construction specified in individual Sections shall cooperate with the Construction Administrator, Architect and the Contractor in performance of the testing agency's duties. The testing agency shall provide qualified personnel to perform required inspections and tests.

1. The testing agency shall notify the Construction Administrator and the Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. The testing agency is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.
3. The testing agency shall not perform any duties of the Contractor.

NOTE: List any special requirements regarding testing.

- E. Owner will pay for the services of an independent testing agency laboratory to perform inspections, tests and other services required by the Specifications except as noted below, listed for which the Owner will issue a deduct change order to cover the cost associated with these tests:
1. When the Contractor notifies the Construction Administrator and/or Testing Agency less than 24 hours before the expected time of testing.
 2. When the Contractor requires testing for his own convenience.
 3. When the Contractor schedules a test and is not ready for the required test.
- F. Reports of test that are part of the submittal requirements which indicate compliance or non-compliance with the specified standard.
- G. See also General Conditions Article 16 "Inspections & Tests".
- H. Fire Alarm/Acceptance Testing Procedures:
1. For buildings exceeding the threshold limit, the fire alarm testing shall be as the authority having jurisdiction shall dictate. This will be as determined by the State Fire Marshals Office.
 2. For buildings that do not exceed the threshold limit, the fire alarm testing shall be as the authority having jurisdiction shall dictate. This will be determined by the Department of Public Works requirements as set below:

- a. Protective Signaling Systems: All protective signaling systems shall meet with acceptance testing requirements of the applicable standards listed in Section 7-6.1.4, NFPA 101/1997 and NFPA 13/19996.
- b. Prior Test Notification: At least 5 working days prior to testing, the Fire Alarm Contractor shall notify (in writing) the following people of the proposed date the acceptance tests are to be performed (Also, see Part 2 of Certificate of Compliance).
 - Department of Public Works Team Representative
 - General Contractor
 - Engineer of Record
 - Equipment Supplier Representative
 - Sprinkler Contractor
- c. Certificates of Compliance
 - 1). A Fire Alarm System Inspection and Testing Certification and Description form shall be prepared for each system (See NFPA 72/1999 Chapter 7 and Figure 7-5.2.2).
 - 2). Parts 1 and 3 through 9, shall be completed after the system is installed and the installation of the wiring has been checked. Every alarm device must also be pre-tested to ensure proper operation and correct annunciation at each remote annunciator and control panel. Part 1 of the form (Certification of System Installation) shall be signed by the fire alarm contractor. The signed and completed preliminary copies of the Certification form shall be forwarded to all parties along with the Prior Test Notification.
 - 3). Part 2, of each applicable form, shall be completed after the operational tests have been completed.
 - 4). After the completion of the operational acceptance tests and sign-off of test witness (with stipulations noted), final copies of the Certificates shall be forwarded to the Department of Public Works Representatives.
- d. Tests:
 - 1). All tests shall be conducted in accordance with the Manufacturers Testing Recommendations.
 - 2). All testing equipment, apparatus (i.e. sound level decibel meter, 2-way radio communication, test devices, ladders, tools, lighting, etc.) and personnel shall be supplied by the Fire Alarm Contractor and Sprinkler Contractor.
- e. System Documentation: Every system shall include the following documentation, which shall be delivered to the Department of Public Works Representatives upon final acceptance of the system.
 - 1). An owner's manual or manufacturer's installation instructions covering all system equipment, including the following:
 - (i) A detailed narrative description of the system inputs, evacuation signaling, ancillary functions, annunciation, intended sequence of operations, expansion capability, application considerations, and limitations.
 - (ii) Operators instructions for basic systems operations including alarm acknowledgment, system reset, interpreting system output (LED's CRT

display, and printout), operation of manual evacuation signaling and ancillary function controls, changing printer paper, etc.

- (iii) A detailed description of routine maintenance and testing as required and recommended and as would be provided under a maintenance contract, including testing and maintenance instructions for each type of device installed. This information should include:
 - (a) A listing of individual system components that require periodic testing and maintenance.
 - (b) Step by step instructions detailing the requisite testing and maintenance procedures and the intervals at which those procedures should be performed.
 - (c) A schedule that correlates the testing and maintenance procedures required by paragraph (2) above and with the listing required by paragraph (1) above.
 - (d) Detailed troubleshooting instructions for each type of trouble condition recognized by the system, including opens, grounds, parity errors, "loop failures," etc. These instructions should include a list of all trouble signals, and step by step instructions describing how to isolate those problems and correct them (or call for service as appropriate).
 - (e) A service directory, including a list of names and telephone numbers for those who should be called to service on the system.

f. As-Built Drawings:

The Contractor will produce two sets of as-built drawings and specifications for the fire alarm system, indicating the location (and programmed address, if applicable) of all devices and appliances, the wiring sequences, wiring methods, connection of the components, and sequence of operation of the protective signaling system as installed, shall be given to DPW representatives. This shall be in Accordance with NFPA 72. Refer also to Section 01700 "Contract Closeout".

1.4 SUBMITTALS

A. Unless the Contractor is responsible for this service, the independent testing agency shall submit a certified written report, in duplicate, of each inspection, test, or similar service to the Construction Administrator. If the Contractor is responsible for the service, submit a certified written report, in duplicate, of each inspection, test, or similar service through the Contractor.

1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.
2. Report Data: Written reports of each inspection, test, or similar service include, but are not limited to, the following:
 - a. Date of issue.
 - b. Project title and number.
 - c. Name, address, and telephone number of testing agency.
 - d. Dates and locations of samples and tests or inspections.

- e. Names of individuals making the inspection or test.
- f. Designation of the Work and test method.
- g. Identification of product and Specification Section.
- h. Complete inspection or test data.
- i. Test results and an interpretation of test results.
- j. Ambient conditions at the time of sample taking and testing.
- k. Comments or professional opinion on whether inspected or tested Work complies with Contract Document requirements.
- l. Name and signature of laboratory inspector.
- m. Recommendations on re-testing.

1.5 QUALITY ASSURANCE

A. Qualifications for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, that are pre-qualified as complying with the National Voluntary Laboratory Accreditation Program and that specialize in the types of inspections and tests to be performed.

- 1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the state where the Project is located.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with Contract Document requirements for Division 1 Section 01045 "Cutting and Patching."
- B. Protect constructions exposed by or for quality-control service activities, and protect repaired construction.
- C. Repair and protection is Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

END OF SECTION 01400

NOTE: Architect, pay close attention to coordinate these needs with the Department of Public Works and Agency. Revise as necessary.

NOTE: This Section 01500 "Construction Facilities and Temporary Controls" includes, but not limited to, administrative and procedural requirements for identification badges, parking stickers, construction facilities and temporary controls, including temporary utilities, support facilities, field offices and storage and security and protection, construction barriers and project sign. Edit paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes requirements for identification badges, parking stickers, construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.
- B. Temporary utilities include, but are not limited to, the following:

NOTE: Modify list below to suit specific project requirements.

1. Temporary Water service and distribution.
2. Temporary electric power and lighting services.
3. Temporary heating, cooling and ventilation
4. Temporary Telephone service and data.
5. Temporary Sanitary facilities, including drinking water.
6. Storm and sanitary sewer.
7. Storm water pollution control.

- C. Support facilities include, but are not limited to, the following: (detail indicated in Section 3.3)

NOTE: Modify list below to suit specific project requirements.

1. Field offices – Contractor, Subcontractor, Owner, and Construction Administrator.
 2. Storage and fabrication sheds.
 3. Temporary roads and paving.
 4. Dewatering facilities and drains.
 5. Temporary enclosures.
 6. Temporary lifts, hoists and elevator use.
 7. Temporary project identification signs.
 8. Temporary exterior lighting.
 9. Collection and disposal of waste and cleaning.
 10. Temporary Environmental Controls.
 11. Stairs.
- D. Security and protection facilities include, but are not limited to, the following: (detail indicated in Section 3.4)

NOTE: Modify list below to suit specific project requirements.

1. Temporary fire protection.
2. Permanent fire protection.
3. Security for site and Agency.
4. Barricades, warning signs, and lights.
5. Enclosure fence.
6. Security enclosure and lockup.
7. Protection.
8. Environmental Protection.
9. Traffic Ways.
10. Identification Badges for Contractors Personnel & Parking Stickers.

1.3 SUBMITTALS

NOTE: Include requirements for submittal of installation drawings of critical temporary utilities, if required.

- A. Temporary Utilities: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.

NOTE: Delete the requirement below on projects of short duration and on small projects with few temporary utility requirements. Modify required number of days to suit project.

- B. Implementation and Termination Schedule: Within (21) Calendar days of the date established for commencement of the Work, submit a schedule indicating implementation and termination of each temporary utility.

1.4 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:

NOTE: Modify list below to comply with specific project regulations. Include requirements governing storm drainage, disposal of excess excavation and waste material, and similar regulations.

1. Building and Fire code requirements.
2. Health and safety regulations.
3. Utility company regulations.
4. Police, fire department, and rescue squad rules.
5. Environmental protection regulations.
6. Americans with Disabilities Act.

NOTE: If Owner has made environmental impact commitments, attach copies or indicate where they may be examined.

- B. Standards: OSHA Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
1. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

NOTE: Revise below to minimize temporary use of permanent utilities, or insert exceptions to provisions. Discourage attempts to delay activation of standpipes and sprinklers.

- A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, the Construction Administrator will direct the change over from use of temporary service to use of permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Provide new materials. If acceptable to the Architect, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.

NOTE: Delete materials that are not required. Add materials as necessary to suit project. Edit sizes of materials.

- B. Lumber and Plywood: Comply with requirements in Division 6 Section 06100 "Rough Carpentry."
1. For signs and directory boards, provide 3/4-inch exterior grade, Grade A-B Fir plywood. Mount sign on preservative treated Fir posts.
 - a. Project sign shall be 4' x 8' painted and supported on 4-inch x 4-inch posts, of the design to be provided by the Owner via the Construction Administrator.
 2. Vision Barriers: Provide minimum 1/2-inch thick exterior plywood.

3. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch thick exterior plywood.

NOTE: Delete 2 paragraphs below if mobile or prefabricated office units are specified. The Architect will provide details on the drawings for sufficient detail.

C. Paint: Comply with requirements of Division 9 Section 09900 "Paint."

1. For sign and directory boards applying graphics, provide exterior-grade alkyd gloss enamel over exterior primer unless otherwise indicated.

D. Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.

E. Water: Provide potable water approved by local health authorities.

NOTE: Delete paragraph below if wood fence or covered walkway is used. For more security, increase fence height to 8 feet (2.5 m) or more etc. or decrease.

- F. Enclosure Fencing: Provide 0.120-inch- (3-mm-) thick, galvanized 2-inch (50-mm) chain link fabric fencing 6 feet (2 m) high galvanized steel pipe posts, 1-1/2 inches knuckle both bottom and top (38 mm) I.D. for line posts and 2-1/2 inches (64 mm) I.D. for corner posts.

2.2 EQUIPMENT

A. General: Provide new equipment. If acceptable to the Architect, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.

1. The Contractor shall furnish tools, apparatus and appliances, hoists and/or cranes and power for same, scaffolding, runways, ladders, temporary supports and bracing and similar work or material necessary to insure convenience and safety in the execution of the Contract except where this is otherwise specified in any Specification Section. All such items shall meet the approval of the Owner but responsibility for design, strength and safety shall remain with the Contractor. All such items shall comply with Federal OSHA regulations and applicable codes, statutes, rules and regulations, including compliance with the requirements of the current edition of the "Manual of Accident Prevention in Construction" published by the A.G.C. and the standards of the State Labor Department.
2. Staging, exterior and interior, required for the execution of this Contract, shall be furnished, erected, relocated if necessary and removed by the General Contractor. Staging shall be maintained in a safe condition without charge to and for the use of all trades as needed.

NOTE: Delete equipment that is not required. Add equipment as necessary to suit specific project requirements.

- B. Water Hoses: Provide 3/4-inch (19-mm), heavy-duty, abrasion-resistant, flexible rubber hoses with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge and backflow preventers.
- C. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- D. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

NOTE: Modify paragraph below to suit specific project requirements.

- E. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- F. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.

NOTE: Modify paragraph below to add stricter requirements when conditions warrant.

- G. Temporary Field Offices: Provide prefabricated or mobile units with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.

NOTE: Delete paragraph below when fixtures connected to previously installed water and sewer service must be used.

- H. Temporary Toilet Units: The Agency will allow the toilets located in _____ for Contractor use. If others are needed, provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- I. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.
 - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

NOTE: The following paragraphs are to be used when a Stormwater Pollution Permit is required.

C. Storm Water Pollution Control:

- 1. Assume responsibility for storm water pollution control by submitting to the Connecticut Department of Environmental Protection (DEP) a "General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities" registration; conform to the permit requirements.
- 2. Conform to the Stormwater Pollution Control Plan included in the Contract Documents or use another plan, prepared at the Contractor's expense, which has been approved by the Owner and Environmental Protection.

NOTE: Insert Specification Section number for reference to the Stormwater Pollution section.

- 1. The "General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities" "draft" registration is attached to the technical Section Stormwater Pollution Control.

4. Sign, and cause to be signed by each appropriate subcontractor, the Certification Statement required by the General Permit.
5. Provide, maintain, and monitor a rain gauge on the site; monitoring shall include maintaining a log of the readings. The rain gauge shall remain the property of the Contractor.

3.2 TEMPORARY UTILITY INSTALLATION (Listed in Section 1.2 B)

General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.

1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.

NOTE: Retain subparagraph below to prevent extra cost to owner.

4. Use Charges: If cost or use charges for temporary facilities are specified by this section to be borne by the Owner the cost or use charges for temporary facilities will be borne not longer than 30 days after final acceptance of the project.

NOTE: Add provisions for work not in contract but served by temporary facilities, if required.

NOTE: Amplify paragraphs below by adding or deleting provisions to suit project requirements.

A. Temporary Water Service and Distribution:

1. Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.

a. Sterilization: Sterilize temporary water piping prior to use.

NOTE: Use appropriate paragraph below that is applicable to the project. Delete paragraphs that are not applicable.

2. Water for construction purposes may be taken from the existing service. The Contractor shall provide connections, approved backflow prevention device, meter and pipe to the water main or nearest hydrant, subject to the approval of the Owner. Upon completion of work, the Contractor shall remove the temporary connections and backfill if necessary. If new water service is installed before construction is complete, the new system may be used provided it is returned to the Owner in as-new condition. The Contractor shall pay for the water used, as metered.

OR

NOTE: If Owner will pay for water, use the below paragraph and delete paragraphs that are not applicable.

2. Connect to existing facilities, through an approved backflow prevention device; extend branch piping with outlets so that water is available by use of hoses. Owner will pay for water used. The Contractor shall not waste water or use faulty equipment. The Contractor shall provide, at his own expense, all connections, extensions and other apparatus required for use of such services. Upon completion of the Contract, the Contractor shall disconnect temporary extensions and return utility to its original condition.

NOTE: Modify paragraph and subparagraph below to include special power loads, such as continued operation of the existing facility, while power changeover is being made.

B. Temporary Electric Power and Lighting Services:

1. Power and lighting may be taken from the power company's nearest pole with temporary poles, if needed, to extend the line to project. If permanent power lines have been installed before beginning project, then temporary lines can be brought in from the last pole.
2. Provide service required for construction with branch wiring and distribution boxes located to provide power and lighting by construction-type extension cords. Meter shall be provided and installed by the Contractor.
3. The Contractor shall pay all costs of temporary power and light.

OR

NOTE: If work involves an existing facility, the following may be used if approved by the Agency. If paragraph below is used then delete the above 3 paragraphs, if not delete paragraph below.

NOTE: Modify subparagraph below to suit project if underground service must be provided, if not delete. If items 1 through 3 are deleted renumber items below if used.

4. Power Distribution System: Install wiring overhead and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 Volts, ac 20 Ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.

NOTE: Insert additional provisions for power distribution to suit project requirements.

5. Temporary Lighting: When overhead floor or roof deck has been installed, provide temporary lighting with local switching. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.

NOTE: Paragraph below includes typical requirements.

C. Temporary Heating, Cooling and Ventilating:

NOTE: Paragraph below includes general requirements.

1. Provide temporary heat required by construction activities for curing or drying of completed installations or for protection of installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize consumption of energy.

NOTE: Modify paragraph below as necessary. LP-gas or fuel oil heaters are commonly used. Steam or hot-water heaters, gas-fired space heaters, or electric unit heaters are also often used.

- a. Heating Facilities: Except where the Owner authorizes use of the permanent system, provide vented, self-contained, LP-gas or fuel oil heaters with individual space thermostatic control.

NOTE: Usually retain subparagraph below. Gasoline burning and salamander heating units are usually prohibited.

- b. Use of gasoline-burning space heaters, open flame, or salamander heating units is prohibited.
2. Provide temporary heat during construction for interior areas included in the Contract to counteract low temperatures or excessive dampness and, in any event, between October 15th and April 15th. Maintain during said period or periods until final completion of the Contract, unless otherwise approved by the Owner in writing. Windows, doors, ventilators and similar openings shall be temporarily closed. Provide heat and ventilation to maintain specified conditions for construction operations and to protect materials and finishes from damage by temperature or

humidity. The permanent heating system is not to be used for temporary heating unless approved, in writing, by the Owner. If approved, use of the permanent heating system by the Contractor does not constitute beneficial use by the Owner. The warrantee for said system will not commence until Substantial Completion is granted. Costs shall be paid by the Contractor. See individual Sections for temperature/humidity limits. Temporary heating methods shall comply with OSHA regulations and other applicable codes, statutes, rules and regulations and shall be approved by the Architect/Engineer and Owner.

3. Permanent air handling equipment, when used for temporary heating, shall be equipped with disposable "construction" filters. The construction filters shall have an average efficiency at least equal to the filters specified under Division 15, but not less than 30% when tested in accordance with ASHRAE 52-76. The filters shall have an average arrestance of not less than 90% efficiency on one (1) micron size particles. Before turning over the system for final acceptance, the contractor shall remove and dispose of the construction filters; spray clean the heating and cooling coils, and drain pans to "like new" condition; and install the filters specified in Division 15 "Materials: Standards".

NOTE: If work involves an existing facility, the following may be used if approved by the Agency.

4. The General Contractor may use the existing heating system with temporary extensions, radiators or unit heaters, but such use is subject to the Owner's approval. Coordinate use of existing facilities with Owner. Provide additional, temporary extensions and units to satisfy the criteria given in the preceding paragraph. Owner will pay cost of energy used. Take measures to conserve energy. At the termination of construction, return the facilities to their original condition. Before operation of permanent facilities, verify that installation is approved for operation and that filters are in place.

NOTE: If applicable to the project, and if steam is available, use the following paragraph and delete above paragraph.

4. Steam from the Agency's lines shall be metered and paid for by the Contractor at a price approved by the Agency and Owner. The Contractor shall arrange with his Heating Subcontractor to install and maintain temporary piping, radiators or unit heaters, reducing valves, steam traps and other necessary fittings and accessories. Traps shall be provided to prevent steam from entering main returns. The temporary layout shall meet the approval of the Architect/Engineer. Condensate meter (or meters) shall be installed to record usage of steam. (The following sentence shall be used when steam is supplied free: "Steam from the Agency's lines will be furnished to the Contractor without cost, but may be discontinued if use is unreasonable or wasteful".) At the termination of construction, return the facilities to their original condition.

NOTE: Revise below to suit project requirements.

- D. Temporary Telephone Service and Data: Provide temporary telephone service throughout the construction period for all personnel engaged in construction activities. Install telephone on a separate line for each temporary office and first aid station. General Contractor shall provide telephone service in his office and separate telephone service in the DPW Office and Construction Administrator's Office, if provided. It is preferred the Contractor use a cellular phone. Basic service and local calls will be paid for by the Contractor. Toll calls will be paid for by the respective users.

1. Separate Telephone Lines: Provide additional telephone lines for the following:

NOTE: Modify list below to suit project requirements.

- a. Where an office has more than 2 occupants, install a telephone for each additional occupant or pair of occupants.
 - b. Provide dedicated telephone lines for a separate fax machine in both the General Contractor's office and the DPW/CA office.
2. At each telephone, post a list of important telephone numbers.

NOTE: Paragraph below provides for normal disposal of liquid wastes.

- E. Temporary Sanitary Facilities, including drinking water: Temporary sanitary facilities include temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
1. Provide toilet tissue, wash basins with water, soap and paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material. The Contractor shall maintain the facilities in a sanitary condition.

NOTE: Retain paragraph below unless facilities can be connected to local water and sewer lines.

2. Toilets: The Contractor shall install, self-contained chemical toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted. Provide separate facilities for male and female personnel.

NOTE: Usually retain subparagraph below.

3. Water Coolers: Where power is accessible, provide electric hot/cold water coolers to maintain dispensed cold water temperature at 45 to 55 deg F (7 to 13 deg C). Provide bottled water service and cup supplies and maintain in a clean sanitary condition.

- F. Storm and Sanitary Sewer: If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully.

NOTE: Modify subparagraph below to suit project.

1. Filter out excessive amounts of soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.
2. Connect temporary sewers to the municipal system, as directed by sewer department officials.
3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.

NOTE: Retain subparagraph below if connection to a municipal sewer is permitted. Modify if connection must be made to a private system.

- G. Storm Water Pollution Control: Provide earthen embankments and similar barriers in and around excavations and sub-grade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

NOTE: Insert gas or other utility services and ventilation or humidity control as required.

3.3 SUPPORT FACILITIES INSTALLATION (Listed in Section 1.2 C)

- A. General: Locate field offices, storage sheds, and other temporary construction and support facilities in designated area as shown on the Contract Documents. The location of the trailers on the Drawings are diagrammatic in nature. Final placement of the trailers is to be approved by the Construction Administrator.

1. Maintain support facilities until Final Completion. Remove prior to Final Completion with permission from the Owner.
- B. **Field Offices:** Provide insulated, weathertight temporary offices of sufficient size to accommodate required office personnel at the Project Site. Keep all offices clean and orderly, sweep weekly and remove rubbish on a daily basis. Furnish and equip offices as follows:
 1. The Contractor shall provide an office for their own use and a method to contact them by e-mail and telephone at any point and time.

OPTION A: (select only one option) The subparagraph below is for Agencies providing space in an existing building. Typically Projects less than \$2,500,000 when the Agency can provide space. Add or delete items of furniture or supplies as needed.

NOTE: Also, check with the Project Manager and Agency if the following paragraph can be used for alteration, renovation or rehabilitation projects.

2. The Agency will furnish, without charge, **(1) one** room(s) for the Contractor's use as an office in an existing building. The Department of Public Works Manager will *share* the Contractor's office. The Contractor shall provide and install a 5 lb. ABC fire extinguisher and an approved first aid kit. The Contractor shall be responsible for furniture and shall keep this area clean and return it to its original condition after use. The Contractor shall provide the following furniture, which will remain his property. The furniture may be used but shall be in good condition as judged by the Construction Administrator.
 - a. The contractor shall provide a lockable chemical toilet with toilet tissue for the owners' use. The contractor shall maintain the facility in a sanitary condition.
 - b. **(1) One** lockable, double-pedestal, office desk, with an executive chair.
 - c. **(1) One** plan table.
 - d. **(1) One** plan rack.
 - e. **(6) Six** conference chairs and a conference table (approx. 3'x6').
 - f. **(1) One** side table (approx. 3'x5').
 - g. **(1) One** 4'x6' wall mounted, cork display board.
 - h. **(1) One** 3'x4' wall mounted, white, wipe-off board, with markers.
 - i. **(2) Two** file cabinets (lockable four drawer letter size).
 - j. **(1) One** bookshelf w/10 L.F. of 12" wide shelving each.
 - k. **(1) One** large capacity waste receptacle.
 - l. **(1) One** plain paper, Fax Machine with dedicated telephone line approved by Owner.
 - m. **(2) Two** telephones with telephone lines and voice mail.
 - n. **(1) One** telephone line (dedicated to computer use) with high-speed Internet connection (minimum of DSL or cable modem service).

NOTE: Insert Microsoft Project (latest version) as required by Section 01310 Construction Schedules or 01315 CPM Schedules and delete scheduling software not referenced in the schedule section utilized for the specific project. All computer software information should be verified prior to bidding each job to verify what is indicated is readily available.

- o. **(1) One Computer, with a 19" monitor, internet and E-mail connection capabilities and the following: 20 GB min hard-drive (7200 rpm) EIDE, the computer shall have a CDRW drive, graphic and sound cards, integrated 3com 10/100 NIC (Network Interconnection**

Capability), 3.5" 1.44 MB floppy disk drive, (2) serial (1) parallel and (2) USB ports, external powered speakers, CD-ROM, 1.5 GHz (minimum) Pentium IV with operating software, including but not limited to, Windows XP, AutoCAD reading program as Voloview, Microsoft Office XP Professional (with working E-mail, ISP by GC), Microsoft Project (latest version), Norton Anti-virus. All software supplied shall be compatible versions.

- p. (1) *One Laser* printers, with (2) hub connections, with supplies approved by Owner.
- q. (1) *One Copy Machine* with automatic stapling, coping capability for letter sized paper (8 ½ x 11), legal size (11 x 14) and ledger size (11 x 17), ability to enlarge and reduce, with collation up to 10 sets, duplex copying (both sides), and supplies for machine approved by Owner.
- r. (1) *One Color printer* with ink and photo paper supplies (equivalent to Epson Stylus Photo 785EPX Inkjet 2880X720DPI 6 Color Full Bleed).
- s. (1) *One Digital Camera* with software (4 mega pixel resolution with minimum 3 X zoom Digital Camera).
- t. (1) *One battery operated wall clock.*
- u. (1) *One mailbox.*

OR

OPTION B: (select only one option) The subparagraph below is for Projects typically below \$10,000,000 that require a construction trailer. Add or delete items of furniture or supplies as needed.

2. The contractor shall provide a field office for the Construction Administrator and the owner. The field office shall be (1) one single wide trailer 12' x 60'. The trailer shall have to be in "new condition" as determined by the Construction Administrator. ***The trailer shall have a minimum of two (2) offices (minimum 150 square feet each), and a main meeting area.*** The trailers shall have ample natural light, heating of sufficient capacity to maintain 70 degrees (F) in winter and air conditioning of sufficient capacity to maintain 75 degrees (F) in summer. The operational noise level of the supplied HVAC systems shall be low enough so as not to impede the conducting of meetings. The Contractor shall provide a 5-lb. ABC fire extinguisher and an OSHA- approved first aid kit. The Contractor shall provide the following furniture, which will remain his property. The furniture may be used but shall be in good condition as judged by the Construction Administrator.

NOTE: Revise subparagraph below by adding or deleting additional items of furniture as needed.

- a. The contractor shall provide a lockable chemical toilet with toilet tissue for the owners' use. The contractor shall maintain the facility in a sanitary condition.
- b. (2) *Two* lockable, double-pedestal, office desks, each with an executive chair.
- c. (2) *Two* plan tables.
- d. (2) *Two* plan racks.
- e. (10) *Ten* conference chairs and a conference table (approx. 5'x12').
- f. (2) *Two* side tables (approx. 3'x5').
- g. (2) *Two* 4'x6' wall mounted, cork display boards.
- h. (1) *One* 3'x4' wall mounted, white, wipe-off board, with markers.

- i. **(4) Four** file cabinets (lockable four drawer letter size).
- j. **(2) Two** bookshelves w/10 L.F. of 12" wide shelving each.
- k. **(2) Two** large capacity waste receptacles.
- l. **(1) One** plain paper, Fax Machine with dedicated telephone line approved by Owner.
- m. **(2) Two** telephones with telephone lines and voice mail.
- n. **(2) Two** telephone lines (dedicated to computer use) with high-speed Internet connection (minimum of DSL or cable modem service).

NOTE: Insert Microsoft Project (latest version) as required by Section 01310 Construction Schedules or 01315 CPM Schedules and delete scheduling software not referenced in the schedule section utilized for the specific project. All computer software information should be verified prior to bidding each job to verify what is indicated is readily available.

- o. **(2) Two Computers, each with a 19" monitor, internet and E-mail connection capabilities and the following: 20 GB min hard-drive (7200 rpm) EIDE, the computers shall have a CDRW drive, graphic and sound cards, integrated 3com 10/100 NIC (Network Interconnection Capability), 3.5" 1.44 MB floppy disk drive, (2) serial (1) parallel and (2) USB ports, external powered speakers, CD--ROM, 1.5 GHz (minimum) Pentium IV with operating software, including but not limited to, Windows XP, AutoCAD reading program as Voloview, Microsoft Office XP Professional (with working E-mail, ISP by GC), Microsoft Project (latest version), Norton Anti-virus.** All software supplied shall be compatible versions.
- p. **(1) One Laser** printer, with (2) hub connections, with supplies approved by Owner.
- q. **(1) One** Copy Machine with automatic stapling, coping capability for letter sized paper (8 ½ x 11), legal size (11 x 14) and ledger size (11 x 17), ability to enlarge and reduce, with collation up to 10 sets, duplex copying (both sides), and supplies for machine approved by Owner.
- r. **(1) One** Color printer with ink and photo paper supplies (equivalent to Epson Stylus Photo 785EPX Inkjet 2880X720DPI 6 Color Full Bleed).
- s. **(1) One Digital Camera** with software (4 mega pixel resolution with minimum 3 X zoom Digital Camera).
- t. **(1) One** battery operated wall clock.
- u. Window blinds.
- v. **(1) One** mailbox.

OR

OPTION C: (select only one option) The subparagraph below is for Projects typically exceeding \$10,000,000 that require a construction trailer. Add or delete items of furniture or supplies as needed. Typically an outside Construction Administration firm is employed by DPW as their Agent on site. Consult the CA for input.

- 2. The Contractor shall provide a field office, for the sole use of the Construction Administrator and the Owner; **(1) one double-wide trailer 24' x 60' including connector or (2) 12' x 60' trailers with connector.** The trailer shall be in "new condition" as determined by the Construction Administrator. **The trailer shall have a minimum of three (3) offices (minimum 150 square feet each), a main meeting area and a sound insulated toilet room, sink and hot and cold**

running water. The trailers shall have ample natural light, heating of sufficient capacity to maintain 70 degrees (F) in winter and air conditioning of sufficient capacity to maintain 75 degrees (F) in summer. The operational noise level of the supplied HVAC systems shall be low enough so as not to impede the conducting of meetings. The Contractor shall provide a 5-lb. ABC fire extinguisher and an OSHA- approved first aid kit. The Contractor shall provide the following furniture, which will remain his property. The furniture may be used but shall be in good condition as judged by the Construction Administrator.

NOTE: Revise subparagraph below by adding or deleting additional items of furniture as needed.

- a. The contractor shall provide a lockable chemical toilet with toilet tissue for the owners' use. The contractor shall maintain the facility in a sanitary condition.
- b. (4) *Four* lockable, double-pedestal, office desks, each with an executive chair.
- c. (4) *Four* plan tables.
- d. (2) *Two* plan racks.
- e. (20) *Twenty* conference chairs and a conference table (approx. 5'x12').
- f. (4) *Four* side tables (approx. 3'x5').
- g. (4) *Four* 4'x6' wall mounted, cork display boards.
- h. (2) *Two* 3'x4' wall mounted, white, wipe-off board, with markers.
- i. (8) *Eight* file cabinets (lockable four drawer letter size).
- j. (4) *Four* bookshelves w/10 L.F. of 12" wide shelving each.
- k. (4) *Four* large capacity waste receptacles.
- l. (1) *One* plain paper, Fax Machine with dedicated telephone line approved by Owner.
- m. (4) *Four* telephones with telephone lines and voice mail.
- n. (4) *Four* telephone lines (dedicated to computer use) with high-speed Internet connection (minimum of DSL or cable modem service).

NOTE: Insert Microsoft Project (latest version) as required by Section 01310 Construction Schedules or 01315 CPM Schedules and delete scheduling software not referenced in the schedule section utilized for the specific project. All computer software information should be verified prior to bidding each job to verify what is indicated is readily available.

- o. (4) *Four Computers, each with a 19" monitor, internet and E-mail connection capabilities and the following: 20 GB min hard-drive (7200 rpm) EIDE, (2) of the computers shall have a CDRW drive, graphic and sound cards, integrated 3com 10/100 NIC (Network Interconnection Capability), 3.5" 1.44 MB floppy disk drive, (2) serial (1) parallel and (2) USB ports, external powered speakers, CD-ROM, 1.5 GHz (minimum) Pentium IV with operating software, including but not limited to, Windows XP, AutoCAD reading program as Voloview, Microsoft Office XP Professional (with working E-mail, ISP by GC), Microsoft Project (latest version), Norton Anti-virus.* All software provided shall be compatible versions.
- p. (2) *Two Laser* printers, with (2) hub connections, with supplies approved by Owner.
- q. (1) *One* Copy Machine with automatic stapling, coping capability for letter sized paper (8 ½ x 11), legal size (11 x 14) and ledger size (11 x 17), ability to enlarge and reduce, with collation up to 10 sets, duplex copying (both sides), and supplies for machine approved by Owner.

- r. (1) *One* Color printer with ink and photo paper supplies (equivalent to Epson Stylus Photo 785EPX Inkjet 2880X720DPI 6 Color Full Bleed).
 - s. (1) *One Digital Camera* with software (4 mega pixel resolution with minimum 3 X zoom Digital Camera).
 - t. (2) *Two* battery operated wall clocks.
 - u. Window blinds.
 - v. (1) *One* mailbox.
3. When the Contractor supplies the trailer(s) they shall equip each trailer with a water cooler for hot and cold water.

NOTE: Expand paragraphs below to suit project.

- C. Storage and Fabrication Sheds: Install storage and fabrication sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on-site.
- 1. Storage sheds for tools, materials and equipment shall be weathertight with heat, lighting and ventilation for products requiring controlled conditions.
 - 2. Remove temporary materials, equipment services and construction before Substantial Completion.
 - 3. Clean and repair damage caused by installation or use of temporary facilities. Restore existing facilities used during construction to specified or to original condition.

NOTE: Delete paragraph below for most urban sites. Permanent paving is assumed to be asphalt concrete. Revise if permanent paving is concrete.

- D. Temporary Roads and Paving: Construct and maintain temporary roads and paving to support the indicated loading adequately and to withstand exposure to traffic during the construction period. Locate temporary paving for roads, storage areas, and parking where the same permanent facilities will be located. Review proposed modifications to permanent paving with the Construction Administrator and Architect.
- 1. Provide paving for pedestrian access and parking for field offices.
 - 2. Paving: Comply with Division 2 Section 02510 "Asphaltic Concrete Paving" for construction and maintenance of temporary paving.
 - 3. Coordinate temporary paving development with sub-grade grading, compaction, installation and stabilization of sub-base and installation of base and finish courses of permanent paving.
 - 4. Install temporary paving to minimize the need to rework the installations and to result in permanent roads and paved areas without damage or deterioration when occupied by the Owner.

Note: Revise subparagraph below if concrete is the permanent pavement material.

- 5. Extend temporary paving in and around the construction area as necessary to accommodate delivery and storage of materials, equipment usage, administration, and supervision.

NOTE: Modify subparagraph below if another material is used. If additional detail is required, expand the subparagraph.

NOTE: Paragraph below contains only basic requirements. Amplify to satisfy soil conservation district requirements.

- E. Dewatering Facilities and Drains: For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with

dewatering requirements of applicable Division 2 Sections. Where feasible, utilize the same facilities. Maintain the site, excavations, and construction free of water.

NOTE: Retain paragraph below. Temporary enclosures are required on most projects at some time during construction. Modify as necessary to suit project.

- F. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25-sq. ft. (2.3 sq. m) or less with plywood or similar materials.
 3. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.

NOTE: Retain subparagraph below for large and high-rise projects. Provisions may be too expensive for small projects.

4. Where temporary enclosure exceeds 100-sq. ft. (9.2 sq. m) in area, use UL-labeled, fire-retardant-treated material for framing and main sheathing.

G. Temporary Lifts, Hoists and Elevator Use:

1. Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

NOTE: Paragraph below is the simplest method of specifying temporary elevator usage. If provisions must be contained in this section, transfer provisions from division 14 sections for elevators and cross-reference this section.

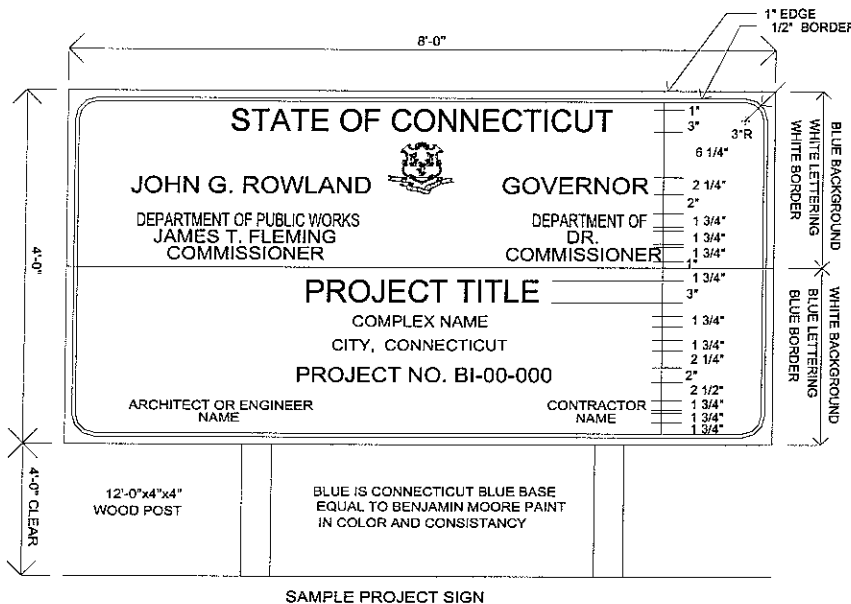
2. Refer to Division 14 Sections for elevators.

H. Temporary Project Identification Signs: Prepare project identification and other signs of size indicated. Install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative-treated wood or steel. Do not permit installation of unauthorized signs.

1. Project Sign: Engage an experienced sign painter to apply graphics. Comply with details to be furnished by the Construction Administrator.
 - a. Temporary Tripod Frame: For groundbreaking ceremonies only, provide a temporary tripod for the sign illustrated on the last page of this Section and described below. Make the tripod of 12 ft. long 2" x 4"s (Stud Grade), beveled and bolted at the top. Provide approximately 5 ft. between legs at grade. Provide a 6-ft. long, 2" x 4" seat for the sign; locate 5 ft. above grade and nail in place. Nail sign at four places where edges intersect tripod legs. Drive a 24", pointed 2" x 4" stake into the earth next to each leg and nail to legs.
 - b. Project Sign: The Contractor shall contact the Construction Administrator for the proper wording for the project sign. Fabricate sign of 3/4", exterior grade, A-B Fir plywood. Mount sign on preservative treated Fir posts. The Owner shall provide design, color selection and illustration of the Project Sign. Paint both sides and all edges of sign and the posts with two coats of exterior, white, alkyd primer. Paint the border and letters with "bulletin" (sign) paint. Letter sizes, colors and related information is given on the illustration as below. A self-adhesive decal of the State seal will be furnished at the Contract signing.

Erect the sign within two weeks after execution of the Contract and remove the sign within one week after completion of the project.

c. Project Sign detail:



NOTE: If required, insert a list of required signs.

NOTE: Revise paragraph below as desired. Insert specific requirements, such as parking lot lighting and illumination of project identification sign.

- I. Temporary Exterior Lighting: Install exterior yard and sign lights so signs are visible when Work is being performed.
- J. Collection and Disposal of Waste and Cleaning:
 1. Collect waste within the contract limit line from construction areas daily. Provide separate containers for proper waste recycling. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27 deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.
 2. Maintain areas under Contractor's control free of waste materials, debris and rubbish. Maintain in a clean and orderly condition.
 3. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces and other closed or remote spaces before closing the space.
 4. Periodically clean interior areas before start of surface finishing and continue cleaning on an as-needed basis.

5. Control cleaning operations so that dust and other particulates will not adhere to wet or newly coated surfaces.

NOTE: Add references to approved disposal methods. Cross-reference sections that specify handling of special waste material.

NOTE: Refer to governing codes, such as OSHA, EPA and USDA covering most temporary environmental controls. However, work involving alterations and additions may require more specific job-related controls; the following are examples, modify and edit as required for specific project. Confer with Project Manager and Agency for specifics text for each example used.

NOTE: Delete paragraph below only when cost considerations are paramount. Expand if specific pests, such as termites or pigeons, are known to be a problem.

K. Temporary Environmental Controls: Contractor is to provide the following controls.

1. Rodent and Pest Control: Before deep foundation work has been completed, retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Employ this service to perform extermination and control procedures at regular intervals so the Project will be free of pests and their residues at materials.
2. Dust Control (construction and demolition).
3. Noise Control.
4. Erosion and Sediment Control.
5. Pollution Control.
6. Traffic Control.

- L. Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate. Cover finished permanent stairs with a protective covering of plywood or similar material so finishes will be undamaged at the time of acceptance.

NOTE: Individual project circumstances may require use of other construction aids and miscellaneous facilities, such as walkways, scaffoldings, platforms, swing stages, ramps and bridges, incidental sheeting and shoring, demolition waste chutes, and similar construction aids. Add requirements as necessary to suit specific project requirements.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION (listed in Section 1.2 D)

NOTE: Modify paragraph below if it does not represent desired arrangement.

Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Owner.

NOTE: Paragraph below specifies currently accepted requirements. Modify to suit local conditions.

- A. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
1. Provide and locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 2. Store combustible materials in containers in fire-safe locations.

3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
5. The Contractor, during construction, shall be responsible for loss or damage by fire to the work of the Contract until completion. Any fire used within the structure for working purposes shall be extinguished when not in use. Bitumen or tar shall be melted on the ground only. No flammable material shall be stored in the structure in excess of amounts allowed by the authorities. No gasoline shall be stored in or close to the building at any time. The Contractor shall assign a responsible employee to be in charge of fire protection measures.
6. If an EPDM or other single-ply roof is included in the work that requires cleaning of mating surfaces of laps with gasoline, limit amount of gasoline on roof to 2 gallons which shall be in U.L. listed containers. Also provide one 30 B:C fire extinguisher within 75 feet of any point on the roof.

NOTE: Retain paragraph below as required if parking stickers are required and modify if parking stickers are to be provided by the Agency rather than the Contractor for the specific project.

- B. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.

NOTE: When sprinkler systems or other permanent fire-protection systems are used, add specific requirements.

C. Security for Site and Agency:

1. Provide security program and facilities to protect work, existing facilities and the Owner and Agency's operations from unauthorized entry, vandalism and theft. Coordinate with the Owner's and Agency's security program.
2. The Contractor shall be solely responsible for damage, loss or liability due to theft or vandalism.

D. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.

1. Provide covered walkways as required by governing authorities for public rights-of-way and for public access to existing buildings.
2. Provide temporary, insulated, weathertight closures at openings to the exterior to provide acceptable working conditions and protection for materials, to allow for temporary heating and to prevent entry of unauthorized persons. Provide doors with self-closing hardware and locks.
3. Barriers and enclosures shall be in conformance with code requirements. Do not block egress from occupied buildings unless necessary to further the work of the Contract. In this case, secure the Owners approval of an alternate egress plan.
4. See also General Conditions Article 19, "Protection of the Work Persons and Property".

Delete paragraph below for restricted city and urban sites where a combination fence and covered walkway or sidewalk bridge will be used.

- E. Enclosure Fences: Before excavation begins, install an enclosure fence with lockable entrance gates. Locate where indicated on the Construction Documents, or enclose the entire site or the portion

determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates.

1. Provide chain link construction fencing with posts set in a compacted mixture of gravel and earth. Use existing fence to the extent possible.

NOTE: Retain paragraph below because the enclosure fence does not always provide adequate security against theft and vandalism.

- F. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Provide keys to the Construction Administrator.

1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

G. Protection:

1. Protect buildings, equipment, furnishings, grounds and plantings from damage. Any damage shall be repaired or otherwise made good at no expense to the Owner.
2. Provide protective coverings and barricades to prevent damage. The Contractor shall be held responsible for, and must make good at his own expense, any water or other type of damage due to improper coverings. Protect the public and building personnel from injury.
3. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.
4. Provide protective coverings for walls, projections, jambs, sills and soffits of openings. Protect finished floors and stairs from traffic, movement of heavy objects and storage. Prohibit traffic and storage on waterproofed and roofed surfaces and on lawn and landscaped areas.

NOTE: For renovation, alterations & additions to existing facilities add the following paragraph.

5. Provide temporary partitions and ceilings to separate work areas from Agency-occupied areas to prevent penetration of dust and moisture into Agency-occupied areas and equipment. Erect framing and sheet materials with closed joints and sealed edges at intersections with existing surfaces.
 6. See also General Conditions Article 19, "Protection of the Work Persons and Property".
- H. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result.

NOTE: Revise paragraphs below to suit specific project.

I. Traffic Ways:

1. The Contractor may use on-site paved roads and parking areas but shall not encumber same or their access. Public highways shall not be blocked by standing trucks, parked cars, material storage, construction operations or in any other manner.
2. Public roads and existing paved roads, drives and parking areas on Owner's property shall be kept free from scrap or debris due to construction operations and any damage to their surface caused by the Contractor shall be repaired by him at his own expense.
3. If the work of the Contract affects public use of any street, road, highway or thoroughfare, the Contractor shall confer with the police authority having jurisdiction to determine if and how

many police are needed for public safety in addition to any barriers and signals that may be needed. The Contractor will be responsible for payment of any needed police services.

NOTE: Revise paragraphs below to suit specific project.

4. Access to ____ located ____ will not be used during time periods when the school children are arriving and being dismissed. No access to the Gate will be allowed:
- | | | | | | |
|-----------------|------|------|---|------|------|
| Monday – Friday | 7:30 | a.m. | – | 9:00 | a.m. |
| Monday – Friday | 2:30 | p.m. | – | 3:30 | a.m. |
- This time period is subject to change at the discretion of the Construction Administrator to coincide with the ____ Schedule.

J. Identification Badges for Contractor's Personnel, Visitors & Parking Stickers:

1. The Contractor will provide each person working or visiting at the site with an identification badge, bearing the name of the Contractor and a number. As badges are assigned, a record shall be kept by the Contractor and given to the Construction Administrator and Agency Administrator. Update and correct the records of all badges issued on a semi-monthly basis.
2. Badges are to be worn on outer garment where visible at all times while at the construction site, return them to the Contractor's field office at the end of each day and pick them up there each morning.

NOTE: Retain paragraph below and modify if parking stickers are required for the specific project and modify if parking stickers are to be issued by the Contractor's rather than the Agency for the specific project.

3. All vehicles parking in the Contractor's parking lot and those used around the site require an ID sticker. They will be issued by the Agency. Each contractor shall apply for parking stickers through the Construction Administrator no more than semi-monthly and shall keep record of all stickers issued.

3.5 OPERATION, TERMINATION, AND REMOVAL

NOTE: Paragraph below is important where allowances for metered use of temporary facilities have been established.

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. Materials and facilities that constitute temporary facilities are the Contractor's property. The Owner reserves the right to take possession of project identification signs.

NOTE: Consider inserting specific removal requirements, as illustrated below.

2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at the temporary entrances, as required by the governing authority.
3. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:

NOTE: Check subparagraphs below for conflict or duplication with provisions in other sections, particularly divisions 15 and 16.

- a. Replace air filters and clean inside of ductwork and housings.
- b. Replace significantly worn parts and parts subject to unusual operating conditions.
- c. Replace lamps burned out or noticeably dimmed by hours of use.

NOTE: Review final draft of this section with owner. Advise owner how any exceptions to its provisions might translate into costs borne by owner.

END OF SECTION 01500

NOTE: This Section has been developed to deal specifically with construction and demolition waste management and is required for LEEDS Certification.

NOTE: Depending on the size and complexity of the project, incorporate all construction and demolition waste information and requirements into a single, stand alone section, Section 01590 – Construction Waste Management, OR distribute construction and demolition waste management information and requirements throughout related documents and sections of the Project Manual. List all related sections.

The **header and footer** for each page of the Project Manual shall match the format, font (Times New Roman), size (11 pt), font style (**BOLD & CAPITALIZED**) and line borders, of the header and footer shown herein.. The **header** of each page shall contain the Section Number, the Section Title, and the page number & number of pages as shown herein. The **footer** shall contain the project number in the right hand side as shown herein, including the Table of Contents. Division 0 and 1 contain a revision date in the left side of the footer This date is to remain as it is for Department informational purposes only and should not be altered by the Architect/Engineer.

NOTE: If you specify the use of an alternate in order to obtain cost information related to job site recycling, delete requirements in this section for the Contractor to develop a draft waste management plan. If you did not specify an alternate in order to determine recycling cost information, the draft waste management plan outlined in this section should be used to estimate the cost of recycling.

NOTE: Edit this section to suit project and location. Delete or edit references to waste disposal in other sections that conflict with the provisions of this section.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes requirements for waste management goals, waste management plan and management plan implementation.

NOTE: Modify paragraph above to suit specific project requirements.

B. Related Sections:

NOTE: Modify list below to suit specific project requirements.

1. Division 1 Section 01010 – “Summary of Work”.
2. Division 1 Section 01019 – “Contract Considerations”.
3. Division 1 Section 01200 – “Project Meetings”.
4. Division 1 Section 01300 – “Submittals”.
5. Division 1 Section 01400 – “Quality Control”.
6. Division 1 Section 01500 – “Construction Facilities and Temporary Controls”.
7. Division 1 Section 01600 – “Materials and Equipment”.
8. Division 1 Section 01631 – “Equals and Substitutions”.
9. Division 1 Section 01700 – “Contract Closeout”.

1.3 DEFINITIONS

- A. Construction Waste: Solid wastes such as building materials, packaging and rubble resulting from construction, paving and infrastructure.
- B. Recyclable Materials: Products and materials that can be recovered and remanufactured into a new product. Recyclable materials include, but are not limited to, the following:
 - 1. Metals (ferrous and non-ferrous), including banding, metal studs, ductwork, and piping.
 - 2. Asphaltic concrete paving.
 - 3. Portland cement concrete.
 - 4. Gypsum products.
 - 5. Paper and cardboard.
 - 6. Wood products, including structural, finish, crates, and pallets.
 - 7. Brick and masonry.
 - 8. Carpet and padding.
 - 9. Plastics.
 - 10. Copper wiring.
- C. Recycling Facility: A business that specializes in collecting, handling, processing, distributing, or remanufacturing waste materials generated by new construction projects, into products or materials that can be used for this project or by others.
- D. Salvage and Reuse: Existing usable product or material that can be saved and reused in some manner on the project site. Materials for reuse must be approved by the Architect. Materials that can be salvaged and reused must comply with applicable technical specifications and include, but are not limited to, the following:
 - 1. Dimensional lumber and other wood products.
 - 2. Structural steel.
 - 3. Soil.
 - 4. Masonry products.
 - 5. Plants.
- E. Salvage for Resale: Existing usable product that can be saved and removed intact (as is) from the project site to another site for resale to others without remanufacturing.

1.4 WASTE MANAGEMENT GOALS

- A. The Owner has established that this Project shall generate the least amount of waste possible and that processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors shall be employed.
- B. The Contractor shall use all means available to divert the greatest extent practical and economically feasible, construction waste from landfills and incinerators.
- C. Of the inevitable waste that is generated, as many of the waste materials as economically feasible shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized.
- D. With regard to these goals the Contractor shall develop, for the Architect's review, a Waste Management Plan for this Project.

E. Take a pro-active, responsible role in management of construction waste and require all subcontractors, vendors, and suppliers to participate in the effort. Establish a construction waste management program that includes the following categories:

1. Minimizing packaging waste.
2. Salvage and reuse.
3. Salvage for resale or donation.
4. Recycling.
5. Disposal.

1.5 WASTE MANAGEMENT PLAN

A. Draft Waste Management Plan: Within 30 calendar days after receipt of Notice of Award of Bid, or prior to any waste removal, whichever occurs sooner, the Contractor shall submit to the Owner and Architect a Draft Waste Management Plan. The Draft Plan shall contain the following:

NOTE: Modify list below to comply with specific project requirements.

1. 1. Analysis of the proposed jobsite waste to be generated, including types and quantities.
2. Landfill options: The name of the landfill(s) where trash will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all Project waste in the landfill(s).
3. Alternatives to Landfilling: A list of each material proposed to be salvaged, reused, or recycled during the course of the Project, the proposed local market for each material, and the estimated net cost savings or additional costs resulting from separating and recycling (versus landfilling) each material. "Net" means that the following have been subtracted from the cost of separating and recycling:
 - a. Revenue from the sale of recycled or salvaged materials and
 - b. Landfill tipping fees saved due to diversion of materials from the landfill. The list of these materials is to include, at minimum, the following materials:

NOTE: List below materials applicable to project and location. The list of materials should include at minimum the materials listed in 1) through 9) below. Add other materials relevant to local area. Examples may include drywall, plastic buckets, carpet and carpet pad trim, paint, asphalt roofing shingles, vinyl siding, plastic sheeting, and rigid foam insulation.

- 1) Cardboard.
- 2) Clean dimensional wood.
- 3) Beverage containers.
- 4) Land clearing debris.
- 5) Concrete.
- 6) Bricks.
- 7) Concrete Masonry Units (CMU).
- 8) Asphalt.
- 9) Metals from banding, stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.

B. Resources for Development of Waste Management Plan: The following sources may be useful in developing the Draft Waste Management Plan:

NOTE: Edit list of recycling resources below to suit project.

1. Recycling Haulers and Markets: Local haulers and markets for recyclable materials. For more information, contact the State Recycling Department.
- C. Final Waste Management Plan: Once the Owner has determined which of the recycling options addressed in the draft Waste Management Plan are acceptable, the Contractor shall submit, within 10 calendar days a Final Waste Management Plan. The Final Waste Management Plan shall contain the following:
 1. Analysis of the proposed jobsite waste to be generated, including types and quantities.
 2. Landfill options: The name of the landfill(s) where trash will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all Project waste in the landfill(s).
 3. Alternatives to Landfilling: A list of the waste materials from the Project that will be separated for reuse, salvage, or recycling.
 4. Meetings: A description of the regular meetings to be held to address waste management. Refer to Section 01200 - Project Meetings.
 5. Materials Handling Procedures: A description of the means by which any waste materials identified in item (3) above will be protected from contamination, and a description of the means to be employed in recycling the above materials consistent with requirements for acceptance by designated facilities.
 6. Transportation: A description of the means of transportation of the recyclable materials (whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site) and destination of materials.

1.6 WASTE MANAGEMENT PLAN IMPLEMENTATION

NOTE: Depending on the size and complexity of the project, either designate a full-time construction waste manager or assign responsibility to the job supervisor or appropriate personnel.

- A. Manager: The Contractor shall designate an on-site party (or parties) responsible for instructing workers and overseeing and documenting results of the Waste Management Plan for the Project.
- B. Distribution: The Contractor shall distribute copies of the Waste Management Plan to the Job Site Foreman, each Subcontractor, the Owner, and the Architect.
- C. Instruction: The Contractor shall provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the Project.
- D. Separation Facilities: The Contractor shall lay out and label a specific area to facilitate separation of materials for potential recycling, salvage, reuse, and return. Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials.
- E. Hazardous Wastes: Hazardous wastes shall be separated, stored, and disposed of according to local regulations.
- F. Application for Progress Payments: The Contractor shall submit with each Application for Progress Payment a Summary of Waste Generated by the Project. Failure to submit this information shall render the Application for Payment incomplete and shall delay Progress Payment. The Summary shall be submitted on a form acceptable to the Owner and shall contain the following information:
 1. The amount (in tons or cubic yards) of material landfilled from the Project, the identity of the landfill, the total amount of tipping fees paid at the landfill, and the total disposal cost. Include manifests, weight tickets, receipt, and invoices.

2. For each material recycled, reused, or salvaged from the Project: the amount (in tons or cubic yards), the date removed from the jobsite, the receiving party, the transportation cost, the amount of any money paid or received for the recycled or salvaged material, and the net total cost or savings of salvage or recycling of each material shall be indicated. Attach manifests, weight tickets, receipts, and invoices.

PART 2 – PRODUCTS

(Not Applicable)

PART 3 – EXECUTION

3.1 SEPARATION OF RECYCLABLE WASTE MATERIALS

- A. Provide the necessary containers and bins, to facilitate the waste management program, that are clearly and appropriately marked. Prevent contamination of recyclable materials from incompatible products and materials. Separate construction waste at the project site by one of the following methods:
 1. Source Separated Method: Waste products and materials, that are recyclable, are separated from trash and sorted into appropriately marked separate containers and then transported to the respective recycling facility for further processing. Trash is transported to a landfill or incinerator.
 2. Co-Mingled Method: All construction waste is placed into a single container and then transported to a recycling facility where the recyclable materials are sorted and processed and the remaining trash is transported to a landfill or incinerator.
 3. Other methods proposed by the Contractor and approved by the Owner.

END OF SECTION 01575

NOTE: This Section 01600 "Materials and Equipment Controls" includes, but not limited to, administrative and procedural requirements governing the Contractor's selection and use of products including but not limited to their transportation, handling, storage, and protection. Edit paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

The **header and footer** for each page of the Project Manual shall match the format, font (Times New Roman), size (11 pt), font style (**BOLD & CAPITALIZED**) and line borders, of the header and footer shown herein. The **header** of each page shall contain the Section Number, the Section Title, and the page number & number of pages as shown herein. The **footer** shall contain the project number in the right hand side as shown herein, including the Table of Contents. Division 0 and 1 contain a revision date in the left side of the footer This date is to remain as it is for Department informational purposes only and should not be altered by the Architect/Engineer.

DO NOT include Paragraphs or parts of Paragraphs in the project manual, which have no applicability to the specific project. KEEP IN NUMERICAL SEQUENCE, IF A PART IS NOT USED OR ELIMINATED THEN RENUMBER THE FOLLOWING SECTIONS. IF A PART IS NOT APPLICABLE TO A SPECIFIC PROJECT THEN DESIGNATE IT AS (NOT APPLICABLE). Also, please review the General Conditions carefully and coordinate the requirements of those Articles including the Definitions.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section 01095 "Reference Standards and Definitions" specifies the applicability of industry standards to products specified.
 - 2. Division 1 Section 01300 "Submittals" specifies requirements for submittal of the Contractor's Construction Schedule and the Submittal Schedule.
 - 3. Division 1 Section 01631 "Equals and Substitutions" specifies administrative procedures for handling requests for substitutions made after award of the Contract.

1.3 DEFINITIONS

NOTE: Always retain this article. These definitions refer specifically to the contents of this section and are not repeated in division 1 section "reference standards and definitions."

- A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.
 - 1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

- a. "Named Products" are items identified by the manufacturer's product name, including make or model number or other designation, shown or listed in the manufacturer's published product literature, that is current as of the date of the Contract Documents.
2. "Materials" are products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

NOTE: Add other elements to the product list as necessary to suit project.

1.4 QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.

NOTE: Paragraph below contains a requirement that could be considered part of project coordination.

- B. Compatibility of Options: When the Contractor is given the option of selecting between 2 or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

NOTE: Paragraph below imposes strict design control requirements. These requirements are an extra cost but are often desirable.

- C. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on the exterior.

1. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.
2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:

NOTE: Modify list below as necessary to suit project, or provide additional information.

- a. Name of product and manufacturer.
- b. Model and serial number.
- c. Capacity.
- d. Speed.
- e. Ratings.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

NOTE: This article eliminates the need to include this information in each section in Divisions 2 through 16. Limit use of this article in each section to unusual requirements.

- A. Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.

NOTE: Delete subparagraphs below that are unnecessary. Insert subparagraphs as necessary to satisfy special project requirements.

1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Store products in accordance with manufacturers' instructions and maintain within temperature and humidity range required by manufacturer.
4. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
7. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation.
8. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
9. Store loose granular material on solid surfaces in a well-drained area; prevent mixing with foreign matter.
10. Arrange storage to provide access for inspection. Periodically inspect to insure products are undamaged and are maintained under required conditions. Keep log showing date, time and problems, if any.
11. Stone, masonry units and similar materials shall be stored on platforms or dry skids and shall be adequately covered and protected against damage.
12. Materials and equipment shall be delivered, stored and handled to prevent intrusion of foreign matter and damage by weather or breakage. Packaged materials shall be delivered and stored in original, unbroken packages.
13. Promptly inspect shipments to assure that products comply with requirements, that quantities are correct and products are undamaged.
14. Packages, materials and equipment showing evidence of damage will be rejected and replaced at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

NOTE: Methods of specifying used limit options available to contractor for product selection. This article defines procedures governing product selection. See evaluations for a discussion of specifying methods.

NOTE: Revise and expand paragraph below as necessary to suit project.

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation.

NOTE: Amplify paragraph above by inserting subparagraphs similar to the examples below.

1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.
2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

B. Product Selection Procedures: The Contract Documents and governing regulations govern product selection. Procedures governing product selection include the following:

NOTE: Retain subparagraph below when specifications contain examples of semi-proprietary specifications (closed proprietary, optional product specifications as described in CSI's "Manual of Practice"). Revise if project conditions permit consideration of substitutions.

1. Semi-proprietary Specification Requirements: Where Specifications name 2 or more products or manufacturers, provide 1 of the products indicated. Comply with the requirements of Division 1 Section "Substitutions".

NOTE: Retain subparagraph below when specifications contain examples of descriptive specifications.

2. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

NOTE: Usually retain subparagraph below. Most specifications contain examples of products that require compliance with some recognized standards, codes, or regulations.

3. Compliance with Standards, Codes, and Regulations: Where Specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.

NOTE: Subparagraph below describes procedures governing visual selection. Modify as necessary to suit project.

4. Visual Selection: Where specified product requirements include the phrase "*...as selected from manufacturer's standard colors, patterns, textures...*" or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern, and texture from the product line selected.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.

1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

NOTE: Insert installation requirements necessary to suit project.

END OF SECTION 01600

NOTE: The Section 01631 "Equals and Substitutions" includes detailed procedural requirements for handling and processing requests for equals and substitutions for a product or system for a specified product or system. **INDIVIDUAL SPECIFICATION SECTIONS WHICH INDICATE THAT A PRODUCT OR SYSTEM EQUAL AND SUBSTITUTION IS PERMISSIBLE MUST REFERENCE THIS SECTION.** "Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply."

NOTE: All specification sections must list at a minimum, 3 manufacturers for all products. The use of one named manufacturer and or equal as well as the use of a performance specification is not allowed. All products specified in Divisions 2-16 must list the order of preference of all products, (If product no. 1 is first choice) all equals must be equivalent to the first manufacturer listed in the specific specification section.

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for handling requests for equals and substitutions made after award of the Contract.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section 01095 "Reference Standards and Definitions" specifies the applicability of industry standards to products specified.
 - 2. Division 1 Section 01300 "Submittals" specifies requirements for submitting the Contractor's Construction Schedule and the Submittal Schedule.
 - 3. Division 1 Section 01600 "Materials and Equipment" specifies requirements governing the Contractor's selection of products and product options.

1.3 DEFINITIONS

NOTE: Retain paragraph below. These definitions refer specifically to contents of this section and are not repeated in division 1 section "reference standards and definitions."

- A. Definitions in this Article do not change or modify the meaning of other terms used in the Contract Documents.

NOTE: Revise paragraph below as appropriate for multiple prime contracts or special project requirements.

B. Equals or Substitutions General: Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract.

1. Equal: Any deviation from the specification which is defined as follows: A replacement for the specified material, device, procedure, equipment, etc., which is recognized and accepted as substantially equal to the first listed manufacturer or first listed procedure specified, after review, by the Architect and may be rejected or approved at the sole discretion of the owner. All equals must be substantially equivalent to the first manufacturer or first procedure listed in the Specifications with reference to all of the following areas: the substance and function considering quality, workmanship, economy of operation, durability and suitability for purposes intended; size, rating and cost. The equal does not constitute a modification in the scope of Work, the Schedule or Architect/Engineer's design intent of the specified material, device, procedure, equipment, etc.
2. Substitution: Any deviation from the specified requirements, which is defined as follows: A replacement for the specified material, device, procedure, equipment, etc., which is not recognized or accepted as equal to the first manufacturer or procedure listed in the Specification after review by the Architect and may be rejected or approved by the Owner. The Substitution is not equal to the specified requirement in comparison to the first manufacture or first procedure listed in the Specifications in one or more of the following areas: the substance and function considering quality, workmanship, economy of operation, durability and suitability for purposes intended; size; cost and rating. The Substitution constitutes a modification in the scope of Work, the Schedule or the Architect/Engineer's design intent of the specified material, device, procedure, equipment, etc.
3. The following are not considered to be requests for Equals or Substitutions:
 - a. Revisions to the Contract Documents requested by the Owner or Architect.
 - b. Specified options of products and construction methods included in the Contract Documents.
 - c. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities having jurisdiction.

NOTE: See definitions for "Equal Substitution" and "Unequal Substitution" in Article 1 of the General Conditions.

1.4 SUBMITTALS

NOTE: The "General Conditions" does not address equal substitution or substitution requests directly. The "Supplementary Conditions" reference procedures for consideration of "substitutions after contract award. Paragraph and "substitutions" article below amplify requirements suggested by "Supplementary Conditions" ..

- A. Equals and Substitution Request Submittals: The Owner will consider requests for equals or substitutions if received within time period designated in the General Conditions Article 15. Requests received more than the days specified in Article 15 after the start date of the contract will be rejected. The contractor shall submit all equal and substitutions requests on a "Substitution Request" form as required by the Owner.
1. The Contractor is required to prepare and submit 3 copies of the required data for the first manufacturer listed or procedure listed in the specifications section with reference to all of the following areas: the substance and function considering quality, workmanship, economy of operation, durability and suitability for purposes intended including the size, rating and cost. All submissions must include all the required data for the first listed manufacturer or procedure as specified, as well as the required data for the proposed Equal or Substitution. This will enable

the Owner and Architect to determine that the proposed Equal or Substitution is or is not substantially equal to the first listed manufacturer or procedure.

2. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers.
3. Provide complete documentation showing compliance with the requirements for equals or substitutions, and the following information, as appropriate:

NOTE: Delete requirements below that are unnecessary or included in the "Supplementary Conditions". Modify, as necessary, retained subparagraphs to suit project.

- a. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate contractors, that will be necessary to accommodate the proposed Equal or Substitution.
- b. A detailed comparison chart of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements, such as performance, weight, size, durability, and visual effect.
- c. Product Data, including Shop Drawings and descriptions of products and fabrication and installation procedures.
- d. Samples, where applicable or requested.
- e. A statement indicating the effect on the Contractor's Construction Schedule or CPM Schedule compared to the schedule without approval of the Equal or Substitution. Indicate the effect on overall Contract Time.
- f. Cost information, broken down, including a proposal of the net change, if any in the Contract Sum.
- g. The Contractor's certification that the proposed Equal or Substitution conforms to requirements in the Contract Documents in every respect and is appropriate for the applications indicated.
- h. The Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the Equal or Substitution to perform adequately.

NOTE: Revise subparagraph below if necessary to allow more time to the 2 weeks and two week approval and re-submittal process requests.

4. Architect's Action: If necessary, the Architect will request additional information or documentation for evaluation within one week of receipt of the original request for equal or substitution request. The Architect will notify the Construction Administrator who will notify the Owner of recommended acceptance or rejection of the proposed equal or substitution, within (2) one weeks of receipt of the request, or (1) one week of receipt of additional information or documentation, whichever is later. The Construction Administrator will give final acceptance or rejection by the Owner not less than (1) one week after notification.
 - a. Any request deemed an "Equal" and accepted by the Construction Administrator, Architect, Owner, and Agency will result in written notification to the Contractor and will not be in the form of a change order for an "Equal".
 - b. Any request deemed a "Substitution" and rejected or approved by Construction Administrator, Architect, and Owner may result in written notification to the Contractor and may be in the form of a change order if the "Substitution" is approved.

PART 2 - PRODUCTS

2.1 EQUAL OR SUBSTITUTIONS

- A. Conditions: The Architect will consider the Contractor's request for Equal or Substitution of a product or method of construction when one or more of the following conditions are satisfied, as determined by the Architect. If the following conditions are not satisfied, the Architect will return the requests to the Construction Administrator without action except to record noncompliance with these requirements.

NOTE: Delete or modify conditions below that are not acceptable. If desired, insert more restrictive conditions to limit consideration of proposed substitutions.

1. The proposed request does not require extensive revisions to the Contract Documents.
 2. The proposed request is in accordance with the general intent of the Contract Documents.
 3. The proposed request is timely, fully documented, and/or properly submitted.
 4. The proposed request can be provided within the Contract Time. However, the Architect will not consider the proposed request if it is a result of the Contractor's failure to pursue the Work promptly or coordinate activities properly.
 5. The proposed request will offer the Owner a substantial advantage, in cost, time, energy conservation, or other considerations, after deducting additional responsibilities the Owner must assume. However, if the proposed request requires the Owner to incur additional responsibilities, including but not limited to, additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or similar considerations, then the Owner will have just cause to reject the request for Equal or Substitution.
 6. The proposed request can receive the necessary approvals, in a timely manner, required by governing authorities having jurisdiction.
 7. The proposed request can be provided in a manner that is compatible with the Work as certified by the Contractor.
 8. The proposed request can be coordinated with the Work as certified by the Contractor.
 9. The proposed request can uphold the warranties required by the Contract Documents as certified by the Contractor.
- B. The Contractor's submission and the Architect's review of Submittals, including but not limited to, Samples, Manufacturer's Data, Shop Drawings, or other such items, which are not clearly identified as a request for an Equal or Substitution, will not be considered or accepted as a valid request for an Equal or Substitution, nor does it constitute an approval.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01631

NOTE: The Section 01650 "Starting of Systems" includes detailed procedural requirements for building system start up and system demonstration. Provide direct reference to individual product specification sections. "Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply."

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for handling requests for building system start up and system demonstration and includes the following:

NOTE: Edit the following listing depending on whether the relevant article is contained within the final edited section or not

1. Starting Systems.
2. Demonstration and instructions.
3. Testing, adjusting, and balancing.

- B. Related Sections: The following Sections contain requirements that relate to this Section:

NOTE: Edit the following references if the Sections below are included in this project.

1. Division 1 Section 01400 "Quality Control" specifies quality assurance and inspecting services.
2. Division 1 Section 01700 "Contract Closeout" specifies requirements for contract close out requirements for system operation and maintenance data and extra materials.

NOTE: Insert the appropriate section reference in paragraph below if system commissioning is provided, otherwise delete paragraph.

3. Division 2, Section "_____" specifies requirements system commissioning.

1.3 STARTING SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.

NOTE: Insert the required number of day for notification prior to start-up of any systems.

- B. Provide written notification to the Construction Administrator (30) Calendar Days prior to start-up of each item.

- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, and control sequence for other conditions that may cause damage.
- D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify in wiring and support components are complete and tested.

NOTE: Include paragraphs below if it is considered an advantage of requiring the contractor to have the manufacturers field services in relationship to scope and complexity of project. Edit or delete paragraphs that are not applicable to project.

- F. Execute the start-up under supervision of manufacturer's representative, in accordance with manufacturer's instructions.
- G. When referenced in individual specification sections, require manufacturer to provide an authorized representative to be present at the site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

NOTE: Section 1400 "Quality Control" describes administrative procedures associated with the following paragraph.

- H. Submit a written report in accordance Section 01400 "Quality Control" that the equipment or system has been properly installed and is functioning properly.

1.4 DEMONSTRATION AND INSTRUCTIONS

NOTE: Revise subparagraph below if necessary to allow more or less time to than the 2 weeks notification specified.

- A. Demonstrate operation and maintenance of Products to Owner and Agency Personnel (2) two weeks prior to substantial completion.

NOTE: Revise any requirements in paragraph below for special classroom instruction as appropriate for project.

- B. Demonstrate Project equipment and instruct in a classroom environment at location designated by the Construction Administrator and instructed by a qualified manufacturer's representative who is knowledgeable about the project.
- C. For equipment or systems requiring seasonal operation perform demonstration for season within (6) six months.
- D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner and Agency Personnel in detail to explain all aspects of operation and maintenance.
- E. Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, and maintenance, and shutdown of each item at agreed upon scheduled time and at equipment or designated location.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during demonstration.

NOTE: Consider adding special requirements that exceed those specified. Possibilities include videocassette recordings for instruction of the owner's personnel.

1.5 TESTING ADJUSTING, AND BALANCING

- A. The Contractor will employ and pay for the testing services of an independent consultant to verify the testing, adjusting, and balancing.
- B. Reports will be submitted by the independent testing consultant to the Construction Administrator indicating observations and results of tests and indicating compliance or non-compliance with the requirements of the Contract Documents.

- C. The Owner may employ and pay for the services of an independent consultant to verify testing, adjusting, and balancing which was performed by the Contractor.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01650

NOTE: This Section 01700 "Contract Closeout" includes requirements regarding contract closeout procedures, final cleaning, adjusting, Project records, operation and maintenance data, warranties. Revise paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

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PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Project record document submittal.
 - 3. Operation and maintenance manual submittal.
 - 4. Submittal of warranties.
 - 5. Final cleaning.
- B. The following sections contain requirements that relate to this section:
 - 1. Division 1 Section 01010 "Summary of work".
 - 2. Division 1 Section 01027 "Applications for Payment".
- C. Closeout requirements for specific construction activities may be included in the appropriate Sections in Divisions 2 through 16.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for Certification of Substantial Completion, complete the following. List exceptions in the request.

NOTE: Delete items from list below that are not applicable or modify items retained to suit project.

- 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete.

- a. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
- b. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
2. Advise the Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

NOTE: Delete subparagraph below if submittal of this material is delayed until final acceptance.

5. Submit record drawings, maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
6. Deliver tools, spare parts, extra stock, and similar items.
7. Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.
8. Demonstration, thru operation and testing, the functions of all systems and/or equipment to the satisfaction of the Owner for compliance to the contract. Complete testing of systems, and instruction of the Owner's operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.

NOTE: Delete 2 subparagraphs below if project does not include these items or if they are delayed until final acceptance.

9. Complete final cleanup requirements, including touchup painting.
10. Touch up and otherwise repair and restore marred, exposed finishes.

NOTE: Modify paragraph below to comply with Department of Public Works policy and project requirements.

- B. Inspection Procedures: The Contractor shall be ready and prepared when they request a Substantial Completion inspection. If the inspection reveals that the work is not complete, there are extensive punchlist items and as the items listed in Part 1.3 above are not complete, the Construction Administrator, Architect, and Owner will determine the inspection has failed.
- C. The Contractor is responsible for all costs to re-inspect due to a failed inspection. The Owner will issue a deduct change order to cover all costs for re-inspection.
 1. The Architect will repeat inspection when requested and assured that the Work is substantially complete.
 2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.

NOTE: If Supplementary Conditions are added to the General Conditions then revise subparagraphs below as necessary.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.

2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, endorsed and dated by the Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Architect.
4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when the Owner took possession of and assumed responsibility for corresponding elements of the Work.
5. Submit consent of surety to Final Payment.
6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

NOTE: Modify paragraph below to comply with Department of Public Works policy and project requirements.

- B. Reinspection Procedure: The Inspection Group will re-inspect the Work upon receipt of notice from the Construction Administrator that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Owner.
1. Upon completion of re-inspection, the Construction Administrator will prepare a certificate of final acceptance. If the Work is incomplete, the Construction Administrator will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.

1.5 AS-BUILT DOCUMENT SUBMITTALS

- A. General: The contractor shall not use As-built Drawings for construction purposes. Protect contractor As-built Drawings from deterioration and loss in a secure, fire-resistant location. Provide access to As-built Drawings for the Architect's reference during normal working hours. Keep documents current; do not permanently conceal any work until required information has been recorded. **Failure to keep As-built Documents current is sufficient cause to withhold progress payments.**
1. The Contractor shall also hire the services of a Surveyor registered in the State of Connecticut to conduct a final survey to determine the location of exterior underground utility lines and to record the results, and update existing electronic media
 2. The record of exterior underground utilities shall be made at the time of installation on Mylar film drawing and AutoCAD (latest version) compatible disks. The drawing shall bear the seal of the Land Surveyor and a statement of accuracy.
- B. As-built Drawings: The Contractor shall maintain one clean, complete undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
1. Mark record sets with erasable pencil to distinguish between variations in separate categories of the Work.
 2. Mark all new information that is not shown on Contract Drawings.
 3. Note related change-order numbers where applicable.

4. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.
5. Upon completion of the work, the Contractor shall submit Record Drawings to the Construction Administrator for the Owner's Records who will pass them on to the Architect or Engineer for transferring the changes to the Record Drawing Mylar Tracings.
6. Submit electronic format data of all Coordination Drawings as required by the owner, at no additional cost.
7. Refer to Section 01400 "Quality Control" Section 1.3 for required as-built drawings and specifications for fire alarm systems.

NOTE: Consider deleting paragraph below on small projects.

- C. Record Specifications: The Contractor shall maintain one complete copy of the Project Manual, including Addenda. Include with the Project Manual one copy of other written construction documents, such as Change Orders and modifications issued in printed form during construction.
1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
 2. Give particular attention to equals and substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.
 3. Note related record drawing information and Product Data.
 4. Upon completion of the Work, submit record Specifications to the Construction Administrator for the Owner's records.

NOTE: Consider deleting paragraph below on small projects. If change-order proposals include resubmittal of updated product data, the need to mark up the previous submittal is eliminated.

- D. Record Product Data: The Contractor shall maintain one copy of each Product Data submittal. Note related Change Orders and markup of record drawings and Specifications.
1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.
 2. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned later by direct observation.
 3. Upon completion of markup, submit complete set of Record Product Data to the Construction Administrator for the Owner's records.

NOTE: Paragraph below represents the normal disposition of samples. Revise as required.

- E. Record Sample Submitted: Immediately prior to Substantial Completion, the Contractor shall meet with the Construction Administrator, Architect and the Owner's personnel at the Project Site to determine which Samples are to be transmitted to the Owner for record purposes. Comply with the Owner's instructions regarding delivery to the Owner's Sample storage area.

NOTE: Paragraph below contains requirements for handling miscellaneous record submittals, such as foundation depths, special measurements, tests, surveys, mix records, and inspections by government authorities. If more detailed requirements are necessary, add a summary of miscellaneous record submittals.

- F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order. Identify miscellaneous records properly and bind or file, ready for continued use and reference. Submit to the Construction Administrator for the Owner's records.

NOTE: Revise and add or delete items from listed examples below that are not applicable or modify items retained to suit project.

- G. Maintenance Manuals: Organize operation and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2-inch (51-mm), 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder according to Section 01730 "Operations & Maintenance Data". Included but not limited to the following types of information:
1. Emergency instructions.
 2. Spare parts list.
 3. Copies of warranties.
 4. Wiring diagrams.
 5. Recommended "turn-around" cycles.
 6. Inspection procedures.
 7. Shop Drawings and Product Data.
 8. Fixture lamping **schedule**.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

NOTE: Retain paragraph below unless project uses Division 1 supplemental section "operation and maintenance data."

- A. Operation and Maintenance Instructions: Arrange for each Installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:

NOTE: Modify list below to suit project.

1. Maintenance manuals.
2. Record documents.
3. Spare parts and materials.
4. Tools.
5. Lubricants.
6. Fuels.
7. Identification systems.
8. Control sequences.
9. Hazards.
10. Cleaning.
11. Warranties and bonds.

12. Maintenance agreements and similar continuing commitments.

NOTE: A/E to identify video taping of demonstration.

B. As part of instruction for operating equipment, demonstrate the following procedures:

1. Startup.
2. Shutdown.
3. Emergency operations.
4. Noise and vibration adjustments.
5. Safety procedures.
6. Economy and efficiency adjustments.
7. Effective energy utilization.

3.2 FINAL CLEANING

NOTE: Delete this article when using Division 1 supplemental section "final cleaning" or if owners prefer to use their own forces. Cleaning provisions in the general conditions are limited to rubbish removal and similar activities.

- A. General: The General Conditions requires general cleaning during construction. Regular site cleaning is included in Division 1 Section "Construction Facilities and Temporary Controls."
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

NOTE: If final cleaning is delayed until final acceptance, modify subparagraph below.

1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion and Certification of Occupancy.

NOTE: Below is a sample list of final-cleaning requirements. Modify to suit project. If list is extensive, use Division 1 supplemental section "final cleaning."

2. Interior
 - a. Remove labels that are not permanent labels.
 - b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Remove paint spots; wash and polish glass.
 - c. Clean exposed interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
 - d. Wash washable surfaces of mechanical, electrical equipment and fixtures and replace filters, clean strainers on mechanical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.
 - e. Clean and polish finish hardware.
 - f. Clean and polish tile and other glazed surfaces.
 - g. Clean floors; wax and buff resilient tile. Clean vinyl or rubber base.
 - h. Vacuum and/or dust walls, ceilings, lighting fixtures, ceiling diffusers and other wall and ceiling items.

- i. Remove defacements, streaks, fingerprints and erection marks.
3. Exterior
 - a. Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth, even-textured surface.
 - b. Clean exposed exterior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances.
 - c. Clean roofs, gutters and downspouts.
 - d. Remove waste and surplus materials, rubbish and construction equipment and facilities from the site, and deposit it legally elsewhere.
 - e. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Remove paint spots; wash and polish glass.

NOTE: First two paragraphs below represent the end of work specified in Division 1 Section "Construction Facilities And Temporary Controls." Most projects require these actions at completion of construction. Insert a paragraph on termite inspection where required for specific project.

- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid the work of rodents, insects, and other pests.
- D. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- E. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.
 1. Where extra materials of value remain after completion of associated Work, they become the Owner's property. Dispose of these materials as directed by the Construction Administrator.
 2. Leave building clean and ready for occupancy. If the Contractor fails to clean up, the Owner may do so, with the cost charged to the Contractor. The Owner will issue a credit change order to cover the costs.

NOTE: Consider adding an article on continuing inspections or consultations by the contractor. Possibly insert a schedule of approximate times for inspections.

END OF SECTION 01700

NOTE: This Section 01730 "Operation and Maintenance Data" includes administrative and procedural requirements for preparing and submitting operation, instruction, and maintenance manuals. Edit paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

The **header and footer** for each page of the Project Manual shall match the format, font (Times New Roman), size (11 pt), font style (**BOLD & CAPITALIZED**) and line borders, of the header and footer shown herein.. The **header** of each page shall contain the Section Number, the Section Title, and the page number & number of pages as shown herein. The **footer** shall contain the project number in the right hand side as shown herein, including the Table of Contents. Division 0 and 1 contain a revision date in the left side of the footer This date is to remain as it is for Department informational purposes only and should not be altered by the Architect/Engineer.

DO NOT include Paragraphs or parts of Paragraphs in the project manual, which have no applicability to the specific project. KEEP IN NUMERICAL SEQUENCE, IF A PART IS NOT USED OR ELIMINATED THEN RENUMBER THE FOLLOWING SECTIONS. IF A PART IS NOT APPLICABLE TO A SPECIFIC PROJECT THEN DESIGNATE IT AS (NOT APPLICABLE). Also, please review the General Conditions carefully and coordinate the requirements of those Articles including the Definitions.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for operation and maintenance manuals, including the following:
 - 1. Preparing and submitting operation and maintenance manuals for building operating systems and equipment.
 - 2. Preparing and submitting instruction manuals covering the care, preservation, and maintenance of architectural products and finishes.
- B. Related Sections: The following Sections contain requirements that relate to this Section:

NOTE: Retain subparagraphs below to reference the section that specifies the preparation of material frequently included in operation and maintenance manuals.

- 1. Division 1 Section 01300 "Submittals" specifies preparation of Shop Drawings and Product Data.
- 2. Division 1 Section 01650 "Starting of Systems" specifies instruction of the Owner and Agency operating personnel in the operation and maintenance of building systems and equipment and the general requirements for starting-up equipment and systems.
- 3. Division 1 Section 01700 "Contract Closeout" specifies general closeout requirements.
- 4. Division 1 Section 01740 "Warranties and Bonds" specifies requirements for submittal of warranties and bonds.
- 5. Appropriate Sections of Divisions 2 through 16 specify special operation and maintenance data requirements for specific pieces of equipment or building operating systems.

1.3 QUALITY ASSURANCE

NOTE: Paragraphs below establish high-quality assurance provisions. For many projects, less stringent requirements are advisable. Modify below to suit project.

- A. Maintenance Manual Preparation: In preparation of maintenance manuals, use personnel thoroughly trained and experienced in operation and maintenance of equipment or system involved.
 - 1. Where maintenance manuals require written instructions, use personnel skilled in technical writing where necessary for communication of essential data.
 - 2. Where maintenance manuals require drawings or diagrams, use draftsmen capable of preparing drawings clearly in an understandable format.
- B. Instructions for the Owner and Agency Personnel: The Contractor must use experienced instructors thoroughly trained and experienced in operation and maintenance of equipment or system involved, to instruct the Owner's operation and maintenance personnel.

1.4 SUBMITTALS

- A. Submittal Schedule: Comply with the following schedule for submitting operation and maintenance manuals:

NOTE: Usually retain subparagraph below. It gives the architect an opportunity to review contents before substantial completion. Revise number of copies required to suit project.

- 1. Before Substantial Completion, when each installation that requires operation and maintenance manuals is nominally complete, submit 2 draft copies of each manual to the Construction Administrator for review. Include a complete index or table of contents of each manual.

NOTE: Complex projects may require additional time. Revise number of days for review to suit project.

- a. The Construction Administrator will return 1 copy of the draft with comments within 21 Working Calendar Days of receipt.

NOTE: Increase time indicated in 2 subparagraphs below, depending on the project's complexity.

- b. Submit 3 copies of data in final form at least 21 Working Calendar Days before final inspection. The Construction Administrator will return one copy within 21 Working Calendar Days after final inspection, with comments.
 - 2. After final inspection, make corrections or modifications to comply with the Architect's comments. Submit final copies to the Construction Administrator within 21 Working Calendar Days of receipt of the Architect's comments.

NOTE: Paragraph below describes typical requirements for binding copies of operation and maintenance manuals. Revise to suit project.

- B. Form of Submittal: Prepare operation and maintenance manuals in the form of an instructional manual for use by the Owner's operating personnel. Organize into suitable sets of manageable size. Where possible, assemble instructions for similar equipment into a single binder.

NOTE: Possibly revise subparagraphs below to satisfy other requirements. An alternate binding would be post-type fasteners. Other storage methods include heavy manila envelopes or fiberboard boxes.

- 1. Binders: For each manual, provide heavy-duty, commercial-quality, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to receive 8-1/2-by-11-inch (115-by-280-mm) paper. Provide a clear plastic sleeve on the spine to hold labels describing contents. Provide pockets in the covers to receive folded sheets.

NOTE: Modify 2 subparagraphs below to suit project.

- a. Where 2 or more binders are necessary to accommodate data, correlate data in each binder into related groupings according to the Project Manual table of contents. Cross-reference other binders where necessary to provide essential information for proper operation or maintenance of the piece of equipment or system.

NOTE: In subparagraph below, insert special requirements, such as indicating 5-digit section number on bottom of spine for identification.

- b. Identify each binder on front and spine, with the printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter covered. Indicate volume number for multiple volume sets of manuals.
2. Dividers: Provide heavy paper dividers with celluloid-covered tabs for each separate section. Mark each tab to indicate contents. Provide a typed description of the product and major parts of equipment included in the section on each divider.

NOTE: Subparagraph below provides protection for troubleshooting software used in some sophisticated operation systems. Delete requirements where unnecessary.

3. Protective Plastic Jackets: Provide protective, transparent, plastic jackets designed to enclose diagnostic software for computerized electronic equipment.

NOTE: Requirements below are normal. Insert special requirements, such as special paper or plastic lamination of important items for permanent preservation, if circumstances warrant.

4. Text Material: Where maintenance manuals require written material, use the manufacturer's standard printed material. If manufacturer's standard printed material is not available, provide specially prepared data, neatly typewritten, on 8-1/2-by-11-inch (115-by-280-mm), 20-lb/sq. ft. (75-g/sq. m) white bond paper.
 5. Drawings: Where maintenance manuals require drawings or diagrams, provide reinforced, punched binder tabs on drawings and bind in with text.
 - a. Where oversize drawings are necessary, fold drawings to the same size as text pages and use as a foldout.

NOTE: Avoid placing loose, oversize drawings in binder pockets. They are often lost. Use reduced drawings. If not practical, place folded drawings in labeled envelopes and place envelopes in pockets or bind envelopes in the manual.

- b. If drawings are too large to be used practically as a foldout, place the drawing, neatly folded, in front or rear pocket of binder. Insert a typewritten page indicating drawing title, description of contents, and drawing location at the appropriate location in the manual.

NOTE: Consider other special requirements, such as use of photographs instead of drawings, to demonstrate unusual installations.

1.5 MANUAL CONTENT

- A. In each manual include information specified in the individual Specification Section and the following information for each major component of building equipment and its controls:

NOTE: Modify list below to suit project.

1. General system or equipment description.
2. Design factors and assumptions.
3. Copies of applicable Shop Drawings and Product Data.
4. System or equipment identification, including:
 - a. Name of manufacturer.

- b. Model number.
 - c. Serial number of each component.
 5. Operating instructions.
 6. Emergency instructions.
 7. Wiring diagrams.
 8. Inspection and test procedures.
 9. Maintenance procedures and schedules.
 10. Precautions against improper use and maintenance.
 11. Copies of warranties.
 12. Repair instructions including spare parts listing.
 13. Sources of required maintenance materials and related services.
 14. Manual index.
- B. Organize each manual into separate sections for each piece of related equipment. As a minimum, each manual shall contain a title page; a table of contents; copies of Product Data, supplemented by drawings and written text; and copies of each warranty, bond, and service contract issued.
1. Title Page: Provide a title page in a transparent, plastic envelope as the first sheet of each manual. Provide the following information:

NOTE: Revise list below to suit project. Make appropriate revisions if the project is performed under multiple prime contracts.

- a. Subject matter covered by the manual.
- b. Name and address of the Project.
- c. Date of submittal.
- d. Name, address, and telephone number of the Contractor.
- e. Name and address of the Architect and Construction Administrator.
- f. Cross-reference to related systems in other operation and maintenance manuals.

NOTE: Revise subparagraph below if the project is performed under multiple prime contracts.

2. Table of Contents: After title page, include a typewritten table of contents for each volume, arranged systematically according to the Project Manual format. Include a list of each product included, identified by product name or other appropriate identifying symbol and indexed to the content of the volume.
 - a. Where a system requires more than one volume to accommodate data, provide a comprehensive table of contents for all volumes in each volume of the set.

NOTE: Modify subparagraph below to suit project. For simple projects that require few manuals, include this information on title page.

3. General Information: Provide a general information section immediately following table of contents, listing each product included in the manual, identified by product name. Under each product, list the name, address, and telephone number of the subcontractor or Installer and the maintenance contractor. Clearly delineate the extent of responsibility of each of these entities. Include a local source for replacement parts and equipment.

NOTE: Coordinate subparagraph below with Division 1 sections "Submittals" and "Contract Closeout." Make certain there are sufficient copies of product data sheets to include in the manuals. Possibly insert specific requirements, such as the method for highlighting text or tabular material.

4. Product Data: Where the manuals include manufacturer's standard printed data, include only sheets that are pertinent to the part or product installed. Mark each sheet to identify each part or product included in the installation. Where the Project includes more than one item in a tabular format, identify each item, using appropriate references from the Contract Documents. Identify data that is applicable to the installation, and delete references to information that is not applicable.

NOTE: Revise subparagraph below to suit project. Add special operating procedures, if necessary.

5. Written Text: Prepare written text to provide necessary information where manufacturer's standard printed data is not available, and the information is necessary for proper operation and maintenance of equipment or systems. Prepare written text where it is necessary to provide additional information or to supplement data included in the manual. Organize text in a consistent format under separate headings for different procedures. Where necessary, provide a logical sequence of instruction for each operation or maintenance procedure.

NOTE: Coordinate subparagraph below with Division 1 Section "Contract Closeout." Require additional record drawings to include in operation and maintenance manuals. If necessary, modify Division 1 Section "Contract Closeout."

6. Drawings: Provide specially prepared drawings where necessary to supplement manufacturer's printed data to illustrate the relationship of component parts of equipment or systems or to provide control or flow diagrams. Coordinate these drawings with information contained in project record drawings to assure correct illustration of the completed installation.

NOTE: Retain subparagraph below. It is not advisable to use record drawings in operation and maintenance manuals.

- a. Do not use original Record Documents as part of operation and maintenance manuals.

NOTE: Subparagraph below provides information in the event of product failure. It may be necessary to provide additional information for specific products.

7. Warranties and/or Bonds: Provide a copy of each warranty and/or bond in the appropriate manual for the information of the Owner's operating personnel. Provide written data outlining procedures to follow in the event of product failure. List circumstances and conditions that would affect validity of warranty or bond.

1.6 MATERIAL AND FINISHES MAINTENANCE MANUAL

NOTE: In paragraph below, change number of copies required to suit project. Increase or decrease the required number of copies after final inspection as required for specific project, consult with agency

- A. Submit 4 copies of each manual, in final form, on material and finishes to the Construction Administrator for distribution. Provide one section for architectural products, including applied materials and finishes. Provide a second section for products designed for moisture protection and products exposed to the weather.
 1. Refer to individual Specification Sections for additional requirements on care and maintenance of materials and finishes.
- B. Architectural Products: Provide manufacturer's data and instructions on care and maintenance of architectural products, including applied materials and finishes.
 1. Manufacturer's Data: Provide complete information on architectural products, including the following, as applicable:

Modify list below to suit project.

- a. Manufacturer's catalog number.
 - b. Size.
 - c. Material composition.
 - d. Color.
 - e. Texture.
 - f. Reordering information for specially manufactured products.
2. Care and Maintenance Instructions: Provide information on care and maintenance, including manufacturer's recommendations for types of cleaning agents to be used and methods of cleaning. Provide information on cleaning agents and methods that could prove detrimental to the product. Include manufacturer's recommended schedule for cleaning and maintenance.
- C. Moisture Protection and Products Exposed to the Weather: Provide complete manufacturer's data with instructions on inspection, maintenance, and repair of products exposed to the weather or designed for moisture-protection purposes.
1. Manufacturer's Data: Provide manufacturer's data giving detailed information, including the following, as applicable:

NOTE: Modify list below to suit project.

- a. Applicable standards.
- b. Chemical composition.
- c. Installation details.
- d. Inspection procedures.
- e. Maintenance information.
- f. Repair procedures.

1.7 EQUIPMENT AND SYSTEMS MAINTENANCE MANUAL

NOTE: In paragraph below, change number of copies required to suit project. For many projects, the architect should retain a copy of each manual. Increase or decrease the required number of copies after final inspection as required for specific project, consult with agency

- A. Submit 4 copies of each manual, in final form, on equipment and systems to the Construction Administrator for distribution. Provide separate manuals for each unit of equipment, each operating system, and each electric and electronic system.
 1. Refer to individual Specification Sections for additional requirements on operation and maintenance of the various pieces of equipment and operating systems.
- B. Equipment and Systems: Provide the following information for each piece of equipment, each building operating system, and each electric or electronic system.
 1. Description: Provide a complete description of each unit and related component parts, including the following:

NOTE: Modify list below to suit project.

- a. Equipment or system function.
- b. Operating characteristics.
- c. Limiting conditions.

- d. Performance curves.
 - e. Engineering data and tests.
 - f. Complete nomenclature and number of replacement parts.
2. Manufacturer's Information: For each manufacturer of a component part or piece of equipment, provide the following:

NOTE: Modify list below to suit project.

- a. Printed operation and maintenance instructions.
 - b. Assembly drawings and diagrams required for maintenance.
 - c. List of items recommended to be stocked as spare parts.
3. Maintenance Procedures: Provide information detailing essential maintenance procedures, including the following:
4. Operating Procedures: Provide information on equipment and system operating procedures, including the following:

NOTE: Modify list below to suit project.

- a. Startup procedures.
 - b. Equipment or system break-in.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Instructions on stopping.
 - f. Shutdown and emergency instructions.
 - g. Summer and winter operating instructions.
 - h. Required sequences for electric or electronic systems.
 - i. Special operating instructions.
5. Servicing Schedule: Provide a schedule of routine servicing and lubrication requirements, including a list of required lubricants for equipment with moving parts.
6. Controls: Provide a description of the sequence of operation and as-installed control diagrams by the control manufacturer for systems requiring controls.
7. Identification Drawings: Provide each Contractor's Identification Drawings.
- a. Provide as-installed, color-coded, piping diagrams, where required for identification.
8. Valve Tags: Provide charts of valve-tag numbers, with the location and function of each valve.
9. Circuit Directories: For electric and electronic systems, provide complete circuit directories of panel boards, including the following:

NOTE: Modify list below to suit project.

- a. Electric service.
- b. Controls.
- c. Communication.

NOTE: Modify requirement below to suit project. When this option has been determined by the User Agency to be desirable, each section that should be utilizing this technique need to identify this paragraph in each section of the technical specifications, and then the A/E will provide within this section the following as a minimum guide to the Contractor.

C. Video Tapes

1. For equipment which requires maintenance by operational personnel, provide a professionally developed Video Tape for the use of maintenance training for the facility. Each tape will be accompanied by a written index which can be utilized to find any specific item of information by time or place on the tape.
2. The Contractor is responsible for this production. This tape will be provided to the Construction Administrator at the same time as the delivery of the other maintenance material.
3. The master tape must be able to be edited for future changes to the equipment and modifications as they occur.

NOTE: Other uses of this medium might wish to be considered, such as a walk through of the facility prior to its completion. An example would be a video taping of all work above the ceiling which can reveal the location of all ductwork, piping, valve locations, filter locations, etc. before the installation of the ceiling. Walk through of crawl spaces and other areas which might be difficult to see in the buildings final completion.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01730

NOTE: This Section 01740 "Warranties and Bonds" includes administrative and procedural requirements for warranties and bonds as required by the Contract Documents, including manufacturers standard warranties on products and special warranties. Edit paragraphs carefully to reflect specific project requirements, or delete them if they do not apply.

The **header and footer** for each page of the Project Manual shall match the format, font (Times New Roman), size (11 pt), font style (**BOLD & CAPITALIZED**) and line borders, of the header and footer shown herein. The **header** of each page shall contain the Section Number, the Section Title, and the page number & number of pages as shown herein. The **footer** shall contain the project number in the right hand side as shown herein, including the Table of Contents. Division 0 and 1 contain a revision date in the left side of the footer. This date is to remain as it is for Department informational purposes only and should not be altered by the Architect/Engineer.

DO NOT include Paragraphs or parts of Paragraphs in the project manual which have no applicability to the specific project. KEEP IN NUMERICAL SEQUENCE. If A PART IS NOT USED OR ELIMINATED THEN RENUMBER THE FOLLOWING SECTIONS. IF A PART IS NOT APPLICABLE TO A SPECIFIC PROJECT THEN DESIGNATE IT AS (NOT APPLICABLE). Also, please review the General Conditions carefully and coordinate the requirements of those Articles including the Definitions.

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

NOTE: Revise paragraphs below with the advice of the owner's counsel. Avoid special warranties if possible.

- A. This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturers standard warranties on products and special warranties.

- 1. Refer to the General Conditions for terms of the Contractor's period for correction of the Work.

- B. Related Sections: The following Sections contain requirements that relate to this Section:

NOTE: Revise subparagraphs below to suit project circumstances:

- 1. Division 1 Section 01300 "Submittals" specifies procedures for submitting warranties.
 - 2. Division 1 Section 01700 "Contract Closeout" specifies contract closeout procedures.
 - 3. Division 1 Section 01730 "Operation and Maintenance Data " specifies required operation and maintenance data.
 - 4. Divisions 2 through 16 Sections for specific requirements for warranties on products and installations specified to be warranted.
 - 5. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.

NOTE: Review limitations below with the Project Manager and AG to determine if exceptions or modifications are necessary.

- C. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

NOTE: Insert specific requirements where a single warranty must cover work by several prime contractors. Prepare a draft of such warranty with the advice of the Project Manager and AG and include it at the end of this section.

1.3 DEFINITIONS (Not Applicable)

1.4 WARRANTY REQUIREMENTS

NOTE: Retain paragraph below. Insert allowable exceptions here or in individual sections.

- A. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.

NOTE: Modify paragraphs below as necessary to establish requirements to reinstate the warranty after failure. Consult the Project Manager and AG when in doubt. The original warranty starts on the date of substantial completion. See Supplementary Conditions. Indicate exceptions to these requirements in individual sections. Check each warranty for special extensions.

- B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

NOTE: On advice of the Project Manager and AG, expand requirement below to provide proportional cost sharing, depending on when the item failed during its useful life. Specify exceptions in individual sections.

- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

- D. Owner's Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.

1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

NOTE: Retain paragraph below. It may make the Owner's position more secure if compromises are necessary and set the stage for recovery in the event of product failure.

- E. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the Owner reserves the right to refuse to accept the Work, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.
- F. The Contractor shall guarantee all materials and workmanship for a period of eighteen months from the date of acceptance of the Work. In addition, the Contractor shall furnish the warranties listed below. Submit four copies of each to the Construction Administrator in the supplier's standard form or in the form given below if there is no standard form available.

NOTE: Edit the following to suit the subject project. Identify each Section with the 5-digit number used in each case. The list gives the minimum acceptable warranty and/or guaranty and/or terms; each is to included in the Specification Section _____ indicated.

1. Section 03, _____, Floor hardener: 5-year, material and workmanship.
2. Section 05, _____, Expansion Joint Covers: 5-year material & workmanship.

3. Section 07 _____, Single-Ply Membrane Roofing, Base Flashing and Insulation: 10-year unlimited, materials and installation: 15-year, material and workmanship. Also, 2-year Contractor's warranty for installation.
4. Section 07 _____, Built Up Roofing (BUR), Base Flashing, Insulation: 20-year material and workmanship. Also 2-year Contractor's warranty for installation.
5. Section 07 _____, Metal Roofing and Siding: 20-year against rupture, cracks or perforation due to corrosion. Also, 20-year for fluorocarbon finish (if used) against peeling, blistering, fading and chalking as limited by industry standards. Plus 10-year weathertightness warranty by installer.
6. Section 07 _____, Copper or Lead-Coated Copper Roofing: 10-year against rupture, cracks or perforation due to corrosion and including materials and workmanship.
7. Section 07 _____, Skylights, Vents and Hatches: 5-year product and installation, including weathertightness.
8. Section 07 _____, Waterproofing: 5-year material and workmanship.
9. Section 07 _____, Water Repellent; the term offered for the Specific product.
10. Section 07 _____, Exterior Expansion Joint Covers: 5-year material and workmanship, including weathertightness.
11. Section 07 _____, Wood Shingles (roofing, siding): 10-year for material and workmanship.
12. Section 07 _____, Exterior - interior caulking and sealants: 5-year, material and workmanship.
13. Section 07 _____, Metal Flashing and Sheet Metal: 3-year, material and workmanship.
14. Section 07 _____, Asphalt Roof Shingles: 25-year, material pro-rated.
15. Section 07 _____, Asphalt Roof Shingles Installation: 15-year, workmanship, pro-rated.
16. Section 08 _____, Solid Wood Core and Mineral Core doors: Lifetime for interior doors, 5-year for exterior doors.
17. Section 08 _____, Overhead Doors (coiling or sectional): 5-year material and workmanship.
18. Section 08 _____, Closers, Locksets, Exit Bolts: Longest term offered by manufacturer for grade/class of particular item, material and workmanship.
19. Section 08 _____, Insulating glass: 10-year against failure of hermetic seal, interpane dusting or misting including replacement of unit.
20. Section 08 _____, Windows: 5-year material and workmanship including weathertightness.
21. Section 08 _____, Laminated Glass: 10-year against delamination.
22. Section 08 _____, Storefront/Curtain Wall: 5-year material and workmanship (insulating glass separate). Air and water infiltration and strength to specified AAMA designation.
23. Section 09 _____, Carpet: 10-year wear and color fastness; 3-year installation.
24. Section 10 _____, Operable Partitions: 5-year material and workmanship.
25. Section 10 _____, Mirrors; 15-years against silver spoilage.
26. Section 14 _____, Elevators and Wheelchair Lifts: Material workmanship, installation for 18 months.
27. Section 15 _____, Fuel Storage Tank: 30-years, material and installation.
28. Section 15 _____, Compressors and Pumps: 5-years, material and installation.

- G. Submit certification that finish materials are fire rated as specified.
H. Form of Guarantees and Warranties:

*Commissioner
Department of Public Works
165 Capitol Avenue
Hartford, Connecticut 06106
(Project Title and Number)*

I (We) hereby guarantee and warranty)

*the _____ work on the referenced project for a period of _____ years
from _____, 19__ against failures of workmanship and materials in accordance
with the requirements of Section ____, Page ____, Paragraph ____, of the Specifications.*

Signed _____

*General Contractor _____
(or authorized agent)*

- I. Bonds shall be by approved Surety Companies, made out to the Commissioner, Department of Public Works on companies standard form.
J. Guarantees, warranties or bonds supplied by Subcontractors, Suppliers or Manufacturers shall reference the project name, number, and location and be certified by the General Contractor to be for the product and installation on the project and must be countersigned by the General Contractor.

1.5 SUBMITTALS

- A. Submit written warranties prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.
B. Forms for special warranties are included in this Section. Prepare a written document utilizing the appropriate form, ready for execution by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Submit a draft to the Owner, through the Construction Administrator, for approval prior to final execution.
1. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.

NOTE: Delete paragraphs below for small projects with only a few warranties.

- C. Form of Submittal: At Final Completion compile 2 copies of each required warranty properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

NOTE: Modify paragraph below to suit project.

- D. Bind warranties and bonds in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (115-by-280-mm) paper.
1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the Installer.
 2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title or name, and name of the Contractor.

NOTE: Coordinate requirement below with Division 1 section "Contract Closeout" or "Operation And Maintenance Data." Make certain there are sufficient copies of warranties for inclusion in the manuals.

3. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not applicable)

END OF SECTION 01740